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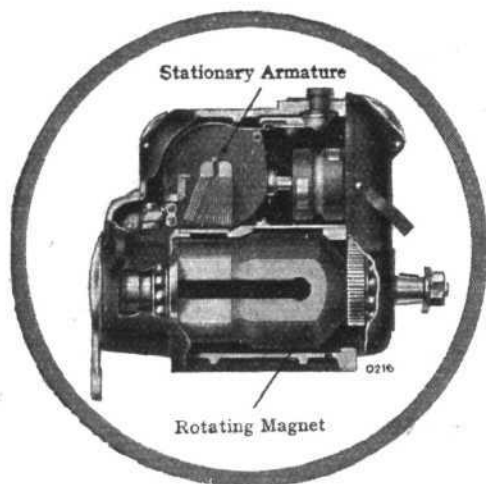
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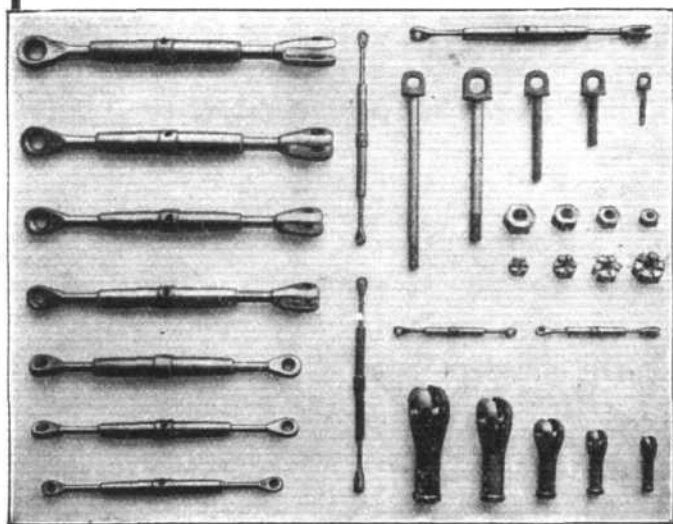
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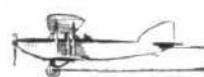
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DIARY OF CURRENT AND FORTHCOMING EVENTS

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1929

- Jan. 24 R.Ae.S. and Inst.Ae.E. Dinner and Discussion on "The Compression Ignition Engine for Aircraft," St. Ermine's Hotel.
- Jan. 31 Lecture, "Monoplane or Biplane?" by W. S. Farren, before R.Ae.S. and Inst.Ae.E.
- Feb. 14 "Air-cooled Engines in Service," by A. H. R. Fedden, before R.Ae.S. and Inst.Ae.E.
- Feb. 28 Lecture, "The Flutter of Aeroplane Wings," by R. A. Frazer, before R.Ae.S. and Inst.Ae.E.
- Mar. 7 Lecture, "Airscrew Body Interference," by C. N. H. Lock, before R.Ae.S. and Inst.Ae.E.
- Mar. 14 Lecture, "Engine Performance Tests," by Wing-Commr. C. B. Hynes, before R.Ae.S. and Inst. Ae.E.

EDITORIAL COMMENT



ELSEWHERE in this issue of FLIGHT we publish a translation of a brief account sent us by a German correspondent, dealing with the seaworthiness trials of the first of the three Rohrbach "Romar" three-engined flying-boats, one of which formed such a conspicuous (and incidentally somewhat controversial) exhibit at the Berlin Aero Show last year. To British eyes at any rate, the "Romar" looked so strikingly different from the "lines" to which we have become accustomed that there was some excuse for the remark made by a visitor to the show: "Either we are wrong or they are." It is, however, just possible that neither is "wrong," and it is mainly for that reason, because of the possibility that both the Rohrbach and the British type may in the end prove useful craft, that we have thought it of interest to publish this week a translation of the German account of the seaworthiness trials of the "Romar."

Without wishing in the least to detract from the merits of a design which could stand the hammering and buffeting which the "Romar" received, first by dragging its moorings and ultimately stranding on the beach, and later during the trials in a rough sea, it is only fair to point out that seaworthiness is, after all, a comparative term, and that British boats have probably been submitted to quite as strenuous tests and have survived conditions every bit as severe.

The account by Mr. Holzapfel states that the "Romar" dragged her moorings during a gale of some 50—60 m.p.h. velocity. Our correspondent also states—and in a way which, if we have interpreted correctly the spirit as well as the letter of the original German article, seems to indicate that he is surprised—that the "mooring stone" (*Bojenstein*) weighed 600 kg. Now, moorings weighing 1,320 lb., would scarcely, in this country, be regarded as adequate for a flying-boat with an all-up weight of nearly 32,000 lbs. We should expect such a craft to drag moorings of that weight.

What is remarkable, assuming the account sent to us to be reliable—and we see no reason to doubt this—is the fact that the machine should have survived the pounding she must have received while lying for two days in the surf, and later as she was being left high and dry by the tide. Not only survived it but without springing a leak.

In this connection it may be recalled that the Short "Singapore," during Sir Alan Cobham's African flight, got into difficulties during a gale at Malta. Although the lower wing of the "Singapore" was damaged, the metal hull itself remained intact, and these two experiences rather seem to indicate that the strength of a modern flying-boat hull is something out of the ordinary.

The hull of the "Romar" is of very peculiar shape, being characterised by very narrow beam, perfectly flat sides, and a fairly pronounced rounded Vee to the planing bottom. Doubtless, the shape and construction of the Vee bottom were mainly responsible for the fact that the hull remained watertight. What seems, perhaps, more remarkable is the fact that the wings were not damaged. With outboard engines and a fairly heavy wing structure, it is to be expected that the stresses set up every time the hull grounded in the breakers would be severe, and it is, at any rate, possible, although our correspondent does not refer to the fact, that the breaking later, during the seaworthiness trials, of the diagonal strut which braces the wing float in a fore-and-aft direction, may have been due to undetected damage sustained during the stranding.

As for riding out gales at moorings, both the Blackburn "Iris" and the Short "Calcutta" have done this very successfully, the "Iris" at Felixstowe and the "Calcutta" at Southampton. Their moorings held (even if only just), and thus they were not called upon to lie in a breaking surf for two days, but their seaworthiness while afloat at moorings was amply demonstrated.

As regards the actual trials of the "Romar," dealt with in the article, these appear to have been entirely successful. To British flying-boat designers and students, the main feature of interest in the Rohrbach "Romar" is the extremely narrow beam of the hull, and in view of certain developments in this country the behaviour of a machine of this type while on the sea is a matter of very considerable interest. We have had no definite statement on the subject from Dr. Rohrbach, whom we did not have the pleasure of meeting during the Berlin Show, but a close examination of the "Romar," its wing loading and power loading figures, no less than its lines and construction, leads one to the conclusion that, for this type of flying-boat, the narrow beam hull is the only satisfactory solution. The "Romar" has a very high wing loading. Even with a high-lift wing this must necessarily mean a high take-off speed. And with a hull of more normal proportions there would appear

to be a likelihood of the lift from the steps raising the machine before the wings are able to take the lift, and the controls capable of giving sufficient power. Consequently, a more beamy hull would probably give rise to difficulties in handling during the actual take-off. To obtain a nice balance between wing lift, planing and control is one of the problems with which the designer of a flying-boat is faced, and it may be imagined that this problem does not become any easier as the take-off speed increases.

If the problem can be successfully solved, and the "Romar" appears to show the possibility of doing so, the narrow beam probably has considerable advantages. The inevitable corollary of high take-off speed is high alighting speed, but the pronounced vee bottom and narrow beam should provide shock-absorbing qualities of a very high order, and if, therefore, the take-off problem with a narrow beam can be overcome, the alighting and seaworthiness should not really present very great difficulties.

Taxying on the surface in a rough sea, the narrow-beam hull will probably give smoother and easier movements than would a more beamy hull, but on the other hand, as the beam is reduced so the problem of lateral stability on the water becomes more difficult. It is interesting to compare the three "schools" which may be said to exist as regards this subject. The British "school" favours biplane arrangement of the superstructure, and wing floats placed under and near the tips of the lower wing. Herr Dornier, on the other hand, uses the monoplane wing, coupled to a hull of fairly wide beam, and relies for lateral stability on the water on wing "stumps" projecting from the sides of the hull. Dr. Rohrbach, also a monoplane exponent, uses an extremely narrow beam, but places his wing floats under the wing engines, *i.e.*, farther outboard than the wing "stumps" of the Dornier boats, but not at the extreme tips, as is British practice.

Which of the three systems is likely to prove the best—if indeed there is very much to choose between them, has not yet been conclusively proved, and the seaworthiness tests of the "Romar" have contributed but little towards a settlement of the question. What they have, apparently, done is to prove that the Rohrbach system does give a very good degree of seaworthiness. But they have not, of course, proved that the other two schools are "wrong."

To us, the great interest of the "Romar" trials lies in the fact that a type of boat which differs so materially from those produced on this side of the North Sea should, during its early trials, have proved not only seaworthy with a total weight of 32,000 lbs., but able to get off repeatedly in a heavy sea. As yet we have no information concerning the ability of the "Romar" to get off in a calm from a smooth sea. It is just possible that this may prove somewhat difficult for the narrow-beam boat, which may be assumed to be at her best in a seaway.

Air Adventures of Sir Sefton Brancker

ON January 16, Sir Sefton Brancker, Director of Civil Aviation, returned to London from the Mediterranean, having encountered one or two air mishaps. Whilst he was flying by seaplane on the Italian Tripoli-Syracuse line the machine was obliged to return to Tripoli owing to engine trouble. Taking another route, Sir Sefton reached Rome and then flew by the regular air service which operates between Rome and Barcelona and calls at Marseilles. The mistral was met which blows with such force in the Marseilles region, and the seaplane was forced down in a small harbour.

about 20 miles from the Marseilles seaplane base. Sir Sefton was then obliged to reach Marseilles by land and go on to Paris by train. From there he flew on the air line to London.

High-Speed Flight

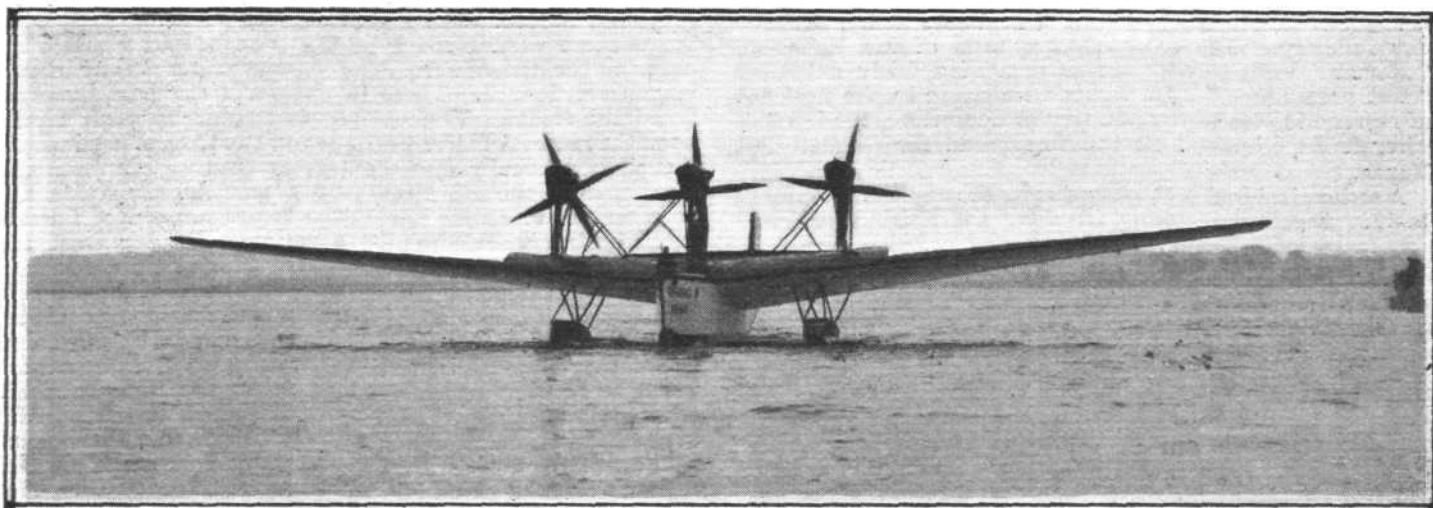
THE R.A.F. High Speed Flight, which will provide the pilots for the British machines entering the Schneider Trophy Race, has been strengthened by the posting of Sqdn.-Ldr. A. H. Orlebar, A.F.C., to the Felixstowe Seaplane Station. The other officers who have already joined the flight are Flight-Lieut. D'Arcy Greig, Flight-Lieut. G. H. Stainforth and Flying Officer D. F. W. Atcherley.

SEAWORTHINESS TESTS OF THE ROHRBACH "ROMAR"

By A. HOLZAPFEL

[We have received from Berlin the article of which a translation is given below. The writer of the article is not personally known to us, but the account and photographs give no cause for believing the "story" to be other than quite reliable, and in view of the unusual design of the Rohrbach "Romar," we have thought

Luft Hansa were faced with the problem of ordering seaworthy flying-boats of the Rohrbach "Romar" type, it doubtless required considerable courage and technical far sightedness to decide upon ordering three boats of this type, especially as at that time the boat was unknown in every

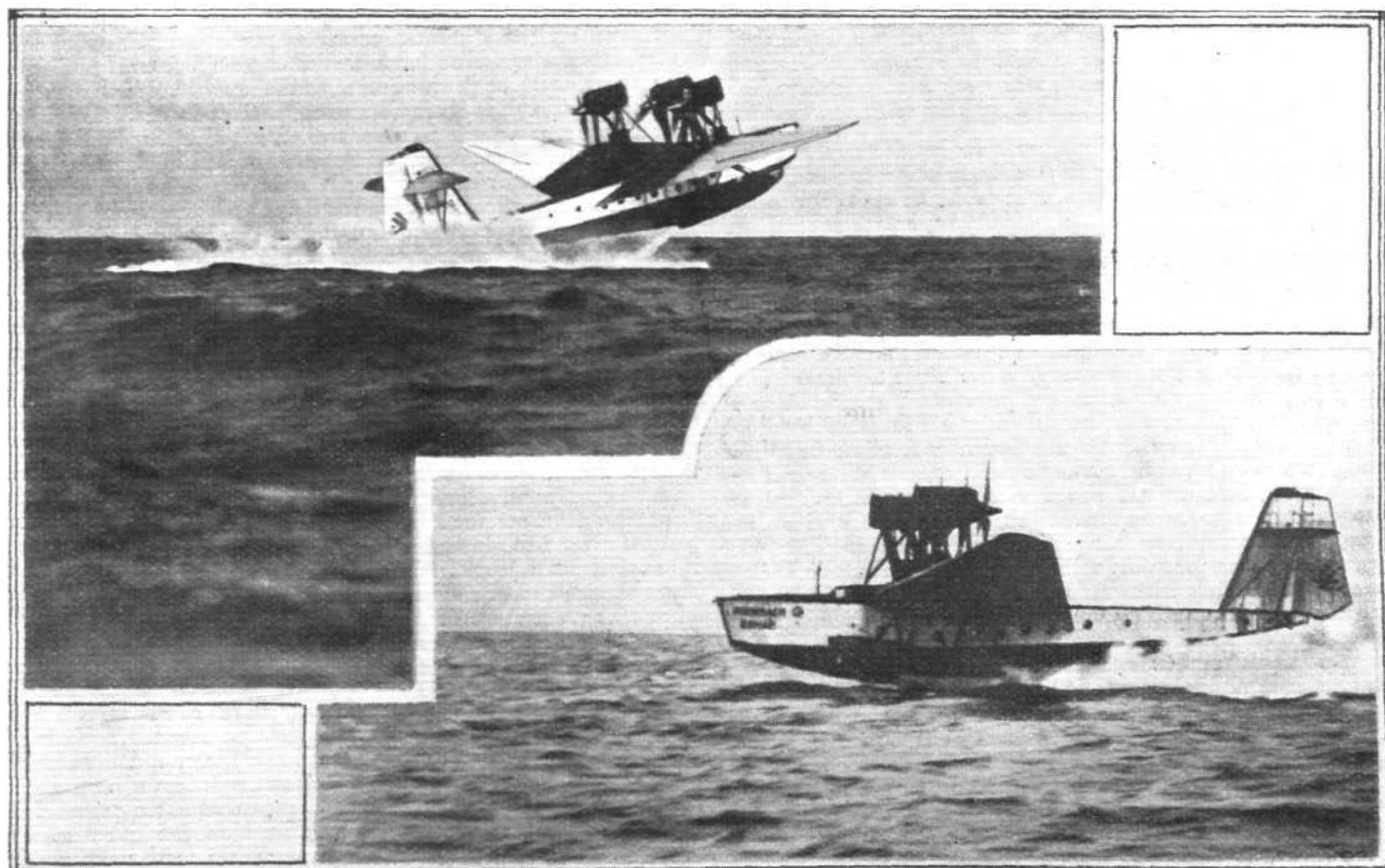


SEAWORTHINESS TESTS OF THE ROHRBACH "ROMAR": View of the machine at moorings. Note the narrow beam of the hull, and the high position of the thrust line of the three engines.

that the article would be of considerable interest to British flying-boat designers and others concerned with the development of the flying-boat.—ED.]

When, more than a year ago, the German Ministry of Commerce (Reichsverkehrsministerium) and the German

way. The confidence in the German industry which was thus shown has been proved fully deserved. The will to seek technical progress which was shown by those who ordered the machines has been attended by success, and the Rohrbach "Romar" has brought German aeromarine



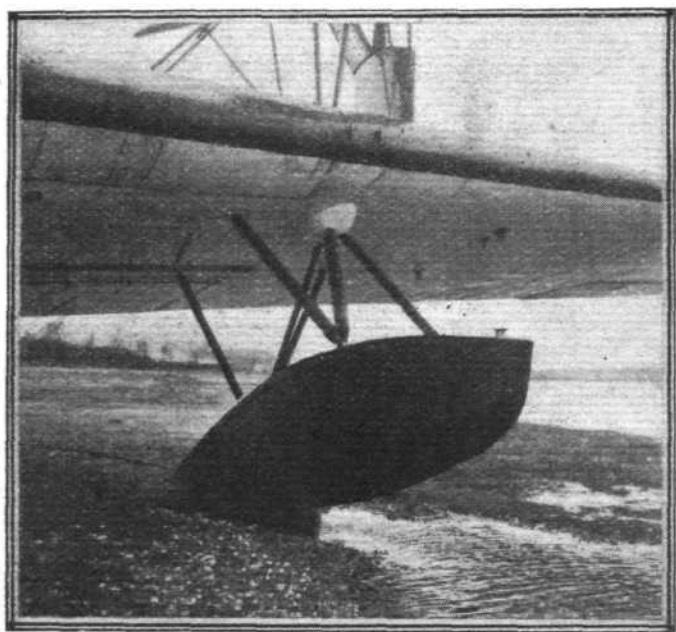
SEAWORTHINESS TESTS OF THE ROHRBACH "ROMAR": The lower photograph shows the machine during one of the starts, while in the upper picture the photographer has caught an exciting incident as the machine leaped off the water during one of the alighting tests.

commercial aviation a good step forward as far as can be seen and judged by experts at present. It is certain that there will be technical progress after the "Romar," but it is also certain that the "Romar" will remain an important stage in the development.

Concerning the performance and load-carrying tests carried out in October, a good deal has already been published in various German aviation journals. It remains to say something about the seaworthiness tests and matters connected therewith.

Seaworthiness is, besides the ability to get off with a heavy load, the greatest problem in flying-boat design, especially because the stresses in flying-boat hulls set up by waves and water impact cannot be calculated; moreover, but a modest amount of practical experience is available in the present-day industry. The seaworthiness tests of the Rohrbach "Romar" were carried out as part of a fairly extensive "test programme." All flights were made in the presence of representatives of the Ministry of Commerce, the German Aircraft Experimental Establishment and the German Luft Hansa.

A serious incident took place during the night of November 16-17. A gale was raging all along the Baltic coast, and



Wing float of the "Romar": This photograph shows the port float. It was the starboard float diagonal strut that collapsed.

in the Trawemünde seaplane station one of the Luft Hansa flying-boats moored to its buoy had its tail so badly damaged by the waves that repairs took more than a week. (This boat was of a type which for years has given excellent service.) So violent was the gale that all three motor boats and launches belonging to the seaplane station filled and sank. The wind velocity was approximately 25 m. per sec. (56 m.p.h.), and on the beach velocities of 29 m. per sec. (65 m.p.h.) were measured. The commander of the (sea) pilots of Trawemünde, Herr Westphal, to whom I spoke of the gale on the morning of November 17, said: "Yes, we went to the Wiek with our pilot cutter to attempt to help, but we could do nothing, and the sea was such that we had enough to do to look after ourselves and our cutter."

Also the "Romar" had to fight hard in the bad weather. She dragged her moorings, 600 kgs. (1,320 lbs.), and stranded on the north-west beach of the Pötenitzer Wiek. There she lay for two days in the surf, and finally was washed ashore by the breakers.

The stranding of a flying-boat, and without anyone on board at that, was an event the results of which were well-known. Naturally the boat must be badly damaged. At least this was generally assumed, and the report that the "Romar" was lying high and dry but undamaged and without a leak was received with incredulous smiles, as was also the statement that most likely the machine would be able to get off the next day under her own power. However, thanks to the exceptional strength of the construction, the

flying-boat had actually survived the stranding without the least damage, and was able to get off under her own power when the tide rose again. If one recalls the way in which previous flying-boats and seaplanes had suffered under the blows of the breakers after a stranding, and compares them with the behaviour of the "Romar" in this incident, one comes to the conclusion that the construction of the latter represents an enormous progress. The Rohrbach "Rocco" also dragged her moorings, but pulled up about 100 m. from the beach, where she remained and rode out the gale without sustaining any damage whatever.

Concerning the seaworthiness tests themselves, the views of the representatives of the Ministry, the D.V.L. and the Luft Hansa are unanimous. The "Romar" acquitted herself very well indeed. The flights were so arranged that, with the offshore wind blowing at the time, it was possible by choosing the distance from the coast to find a seaway of any magnitude desired. Those in charge of the tests were on board the steamer *Trawemünde*, and in my account I rely upon the reports of Herr Bertram and Dr. Koppe, from which I shall occasionally quote extracts. During the tests the wind was north-east, strength 6-7, and the seaway in the open sea was 6. In the Neustädter Bay seaways of 3, 4 and 5 could be found by choosing a suitable distance from the coast.

On being informed that the "Romar" had started the *Trawemünde* put to sea and steamed against the wind in a seaway of 2-3. On the pre-arranged signal being given, the "Romar" alighted in this seaway, and as there was a swell running at the time, across the seas, the total effect corresponded to a seaway of about 4. After the first alighting the machine made a jump, and then came to rest, lying quietly in the sea. The first start, during which no spray came on board, took 22 seconds. The *Trawemünde* then turned outwards, and farther from the coast found a patch of water where the seaway was 3-4 again with a cross swell. The "Romar" again alighted and but little water came aboard, and this only at the last moment as the machine was almost stationary (purely a breaker). The next start took but 20 seconds. The machine made three jumps, being flung into the air by the top of the waves. A little spray washed over, but this ran off under the engines.

The *Trawemünde* steamed out until a seaway of magnitude 5 was found, still with a cross swell running, which was equivalent to a seaway of about 6. When alighting, the "Romar" made three bounces clear of the water, but by opening the throttles at the right moment the pilot was able each time to bring the machine back to the correct trim for alighting. At the fourth start the swell, which was coming from starboard, pressed the starboard wing float under. It is assumed that the bolt which secured the diagonal strut to the wing sheared off. The strut collapsed, and the float was free to move forward, with the result that the machine lay over on the starboard wing. The wing cut under, and the machine swung around through a complete circle, fetching up heading into the wind, and then quickly righting herself. With previous machines such a happening would almost certainly have resulted in total loss, as usually the machine would then dig in and turn over. In the "Romar," however, the watertight construction of the box wing spar gives great buoyancy, and in the case mentioned it saved the machine from capsizing. The "Romar" after the mishap refused a tow, and rolled into Neustadt in a cross sea under her own power. In spite of the heavy sea, across the wind, and the swell which was now aft, the machine could be manoeuvred and kept broadside to the wind. Capsizing was out of the question. The wing float strut collapsed, but the float itself was not damaged and continued to give a certain amount of support. The pilot even asked permission to go up again and continue the tests, which would have been quite feasible, but it was decided to discontinue, mainly for reasons of insurance. The fear that the submerged wing would be damaged was proved groundless, as the wing was quite undamaged in spite of seas breaking over it. The ensuing manoeuvre showed that even under such conditions the machine could easily be righted.

The acceptance tests of the "Romar" were thus concluded, and at 4 p.m. the machine was secured at the slipway in Neustadt. Spares for the damaged float were ordered by telephone and sent by car, and at 6.30 the machine was ready to start again. The seaworthiness tests were carried out at the contract weight of 14.5 metric tonnes (31,900 lbs.)

Starting with the assumption that seaworthiness is first and foremost a matter for sailors, I asked the Commandant of the *Trawemünde* (sea) pilots, Herr Westphal (who had been on board the steamer *Trawemünde*) to express an



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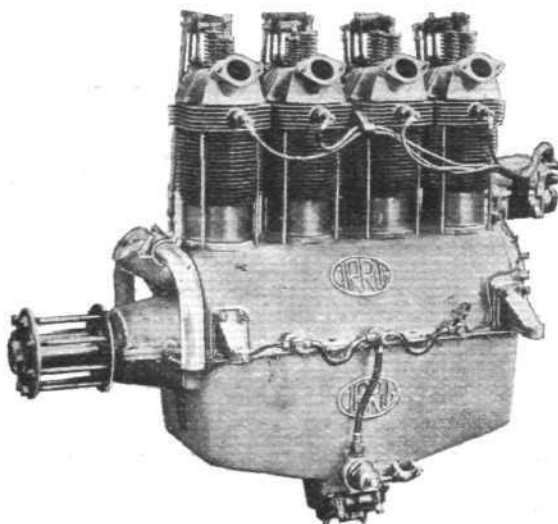
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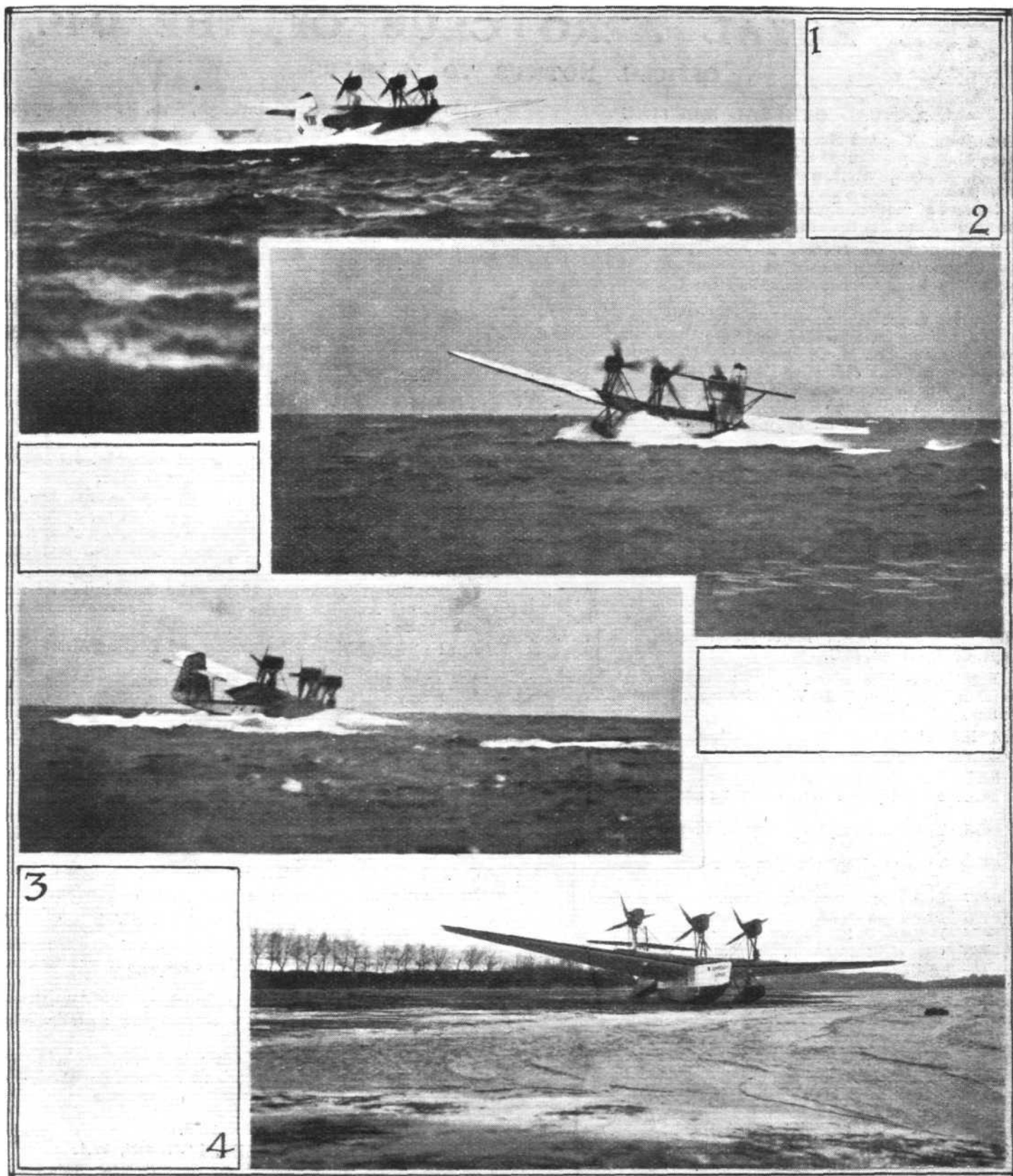
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SEAWORTHINESS TESTS OF THE ROHRBACH "ROMAR" : 1, Taxiing in a rough sea. 2, collapse of starboard wing float strut. 3, machine swinging around, with starboard wing partly submerged. As the wing is watertight, the machine did not capsize. All these tests were carried out after the machine had dragged her moorings in a gale and drifted on to the beach, as shown in 4.

opinion, and I quote from his reply the following : " During the manoeuvres on the water, and during the figures-of-eight carried out, when the boat was lying broadside on to the waves, the seaworthiness was good, and the boat rolled very little and never gave any cause for anxiety."

During the seaworthiness tests of the " Romar " the seas were especially short and choppy, as they are in the Baltic and North Sea much more than on the coasts of the Atlantic, where the distance between the waves is twice as great.

French Air Ministry Changes

A NATIONAL air staff will be included in the new French Air Ministry, also directorates of personnel, material, civil aviation, finance and pensions. The National Meteorological Office will come under its jurisdiction.

More Amalgamation

THE Caproni Aviation Company of Italy has amalgamated with the Curtiss Aeroplane and Motor Company of New York. The new concern will control the exclusive manufacture and sale of Caproni machines in America.



THE ROYAL AERO CLUB OF THE U.K.

OFFICIAL NOTICES TO MEMBERS

ANNUAL GENERAL MEETING

THE Annual General Meeting of the members of the Royal Aero Club of the United Kingdom will be held at 3, Clifford Street, London, W.1, on Wednesday, March 27, 1929, at 8.30 p.m.

Notices of motion, signed by at least five members, must be received not less than 21 days before the meeting.

Election of Committee.—In accordance with the rules, the Committee shall consist of 18 members. Members are elected to serve for two years, half the Committee retiring annually.

Retiring members are eligible for re-election.

The retiring members of the Committee are:—Griffith Brewer, Lieut.-Col. M. O. Darby, O.B.E., Lieut.-Col. J. D. Dunville, C.B.E., Brig.-Gen. Sir Capel Holden, K.C.B., F.R.S., Wing-Commander T. O'B. Hubbard, M.C., A.F.C.; Lieut.-Col. Sir Francis K. McClean, A.F.C.; F. Handley Page, C.B.E.; T. O. M. Sopwith, C.B.E.; Captain C. B. Wilson, M.C.

Any two members of the club may nominate a member to serve on the Committee provided the consent of the member has been previously obtained. The name of the member thus nominated, with the name of his proposer and seconder, must be received not less than 14 days before the annual general meeting.

Report of meeting of the Committee held on January 16, 1929:—

Present.—Lieut.-Col. M. O'Gorman, C.B., in the chair; Griffith Brewer; Lieut.-Col. M. O. Darby, O.B.E.; F. Handley Page, C.B.E.; Major H. A. Petre, D.S.O., M.C.; Capt. C. B. Wilson, M.C.

Elections.—The following new members were elected:—William Henry Elce, John Vivian Holman, Thurstan Trewarta James, John Scott Taggart.

Aviators' Certificates.—The following Aviators' Certificates were granted:—

- 8473 Janet Hendry, Scottish F.C.
- 8474 Robert James Welsh, Suffolk and Eastern Counties A.C.
- 8475 Thomas Humphrey Naylor, Liverpool and District A.C.
- 8476 William Reginald James Alston Roberts West, Cinque Ports F.C.
- 8477 Sydenham Armstrong Payn, Cinque Ports F.C.
- 8478 Elic Ross Robertson, Scottish F.C.
- 8479 Douglas Keith Fairweather, Scottish F.C.
- 8480 Gerald Collingwood, Suffolk and Eastern Counties A.C.
- 8481 Douglas Temple Bennett, London A.C.
- 8482 Albert Percival Clifford Rogers, Bristol and Wessex A.C.
- 8483 Francisco-Jose Hapsburgo Borbon, De Havilland F.S.
- 8484 Henry Cope Hamilton, Cinque Ports F.C.
- 8485 Ernest Thomas Worsell, Cinque Ports F.C.
- 8486 Hugh Dunsmuir Primrose, Scottish F.C.
- 8487 Edward Victor Somers, Cinque Ports F.C.
- 8488 Martin Nieto Hearn, Lancashire School of Aviation.
- 8489 Roland Hobhouse Thornton, Liverpool and District A.C.

8490 William Waters Stainthorpe, Jnr., Newcastle-upon-Tyne A.C.

8491 Cyril Gleeson, Midland A.C.

8492 William Ivor Lionel Legg, Singapore F.C.

8493 Robert Johnstone, Singapore F.C.

8494 Horace Stanley Chapman, Singapore F.C.

F.A.I. Conference, Paris, January 11, 1929.—The report of the club delegates, Lieut.-Col. M. O'Gorman and Mr. H. E. Perrin, was submitted. The report included the following:—

F.A.I. Medal.—The award of the F.A.I. Medal to Squadron-Leader H. J. L. Hinkler, A.F.C., D.S.M., R.A.A.F.

In making this award the performances of the following were also considered by the F.A.I.:—Dr. Hermann Koehl, Major A. Ferrarin, Capt. Sir G. H. Wilkins, Capt. E. Kingsford Smith, M. Costes, J. de la Cierva.

Carnets for Touring Aircraft.—Decision to make the carnet available for twelve entries and exits to countries, instead of six as at present.

Automatic Timing of High Speed Records.—Decision to adopt automatic timing as from July 1, 1929.

Prizes for Aviation Meetings, Competitions, Etc.—Each National Aero Club is to be responsible for obtaining the necessary guarantees or deposits for all prizes competed for under the rules of the National Aero Club and the Regulations of the F.A.I.

International Calendar, 1929.—The following dates for International Aviation events in 1929 were submitted by the delegates:—

- April Exhibition of Sporting and Touring Aircraft in Switzerland.
- Jun 19-22 F.A.I. Conference, Copenhagen.
- „ 27-30 International Flying Meeting, Rotterdam.
- July 13 R.A.F. Display, Hendon.
- „ 16-27 International Aero Exhibition, London.
- „ 28 International Flying Meeting, Sweden.
- Aug. 1-14 International Competition for Touring Aircraft, Paris.
- „ 15 International Balloon Race, Poland.
- Sept. 6-7 Schneider Cup, Solent.
- „ 10-20 Aeronautical week of the Aero Club de France, Le Baule.
- Oct. 1 Gordon Bennett Balloon Race, St. Louis.

International Touring Competition.—Having considered the regulation of the proposed International Touring Competition, and also the views of the S.B.A.C., and the fact that the Club would be required to contribute 80,000 francs towards the prizes and organisation expenses, it was decided not to take part this year.

The Late Mr. Frank Hedges Butler.—The Committee decided to place in the Club a bronze plaque of the late Mr. Frank Hedges Butler.

Annual General Meeting.—It was decided to hold the annual general meeting of the club on Wednesday, March 27, 1929, at 8.30 p.m.

Offices: THE ROYAL AERO CLUB,
3, CLIFFORD STREET, LONDON, W.1.
H. E. PERRIN, Secretary

“Monoplane or Biplane?”

On Thursday, January 31, before the R.Ae.S. and Inst.Ae.E., Mr. W. S. Farren, M.B.E., M.A., F.R.Ae.S., M.I.Ae.E., will read his highly important and controversial paper on the “Monoplane or Biplane Form of Construction?”

In this country the biplane form of construction has had far more adherents than the monoplane, though the reverse is the case in other countries, particularly Germany. The following is a summary of his lecture:—

“I hope to be able to show you that, if certain premises which appear to me to be reasonable are conceded, it is probable that for commercial aeroplanes of between 15,000 and 30,000 lbs. in total weight the biplane arrangement, which has been mainly developed in this country, has, on the whole, the advantage.

“Insurance rates on certain British commercial aeroplanes are, I believe, lower than on any other aircraft—

presumably because they are judged to be safer. I hope to show that they are safer, to some extent, because they are biplanes.

“The Junkers construction is a brilliant achievement, but it is economical only in conjunction with higher loadings, and a standard of torsional strength less than half that required by British airworthiness regulations.

“I estimate the gross paying load of the monoplane to be about nine-tenths of that of the biplane. I think the monoplane has now a slight advantage. We must learn how to reduce head resistance. Probably by then we shall have learnt how to make still better biplanes.”

Mr. Farren gives many facts and figures to prove his contention that the biplane is not only the safer form of construction, but also the better form, and that British designers were right in adhering to this form of construction as against the monoplane form preferred abroad.

1st PIONEER FLIGHT OF 1929 LONDON—GOLD COAST ON GOLDEN SHELL OIL and SHELL PETROL



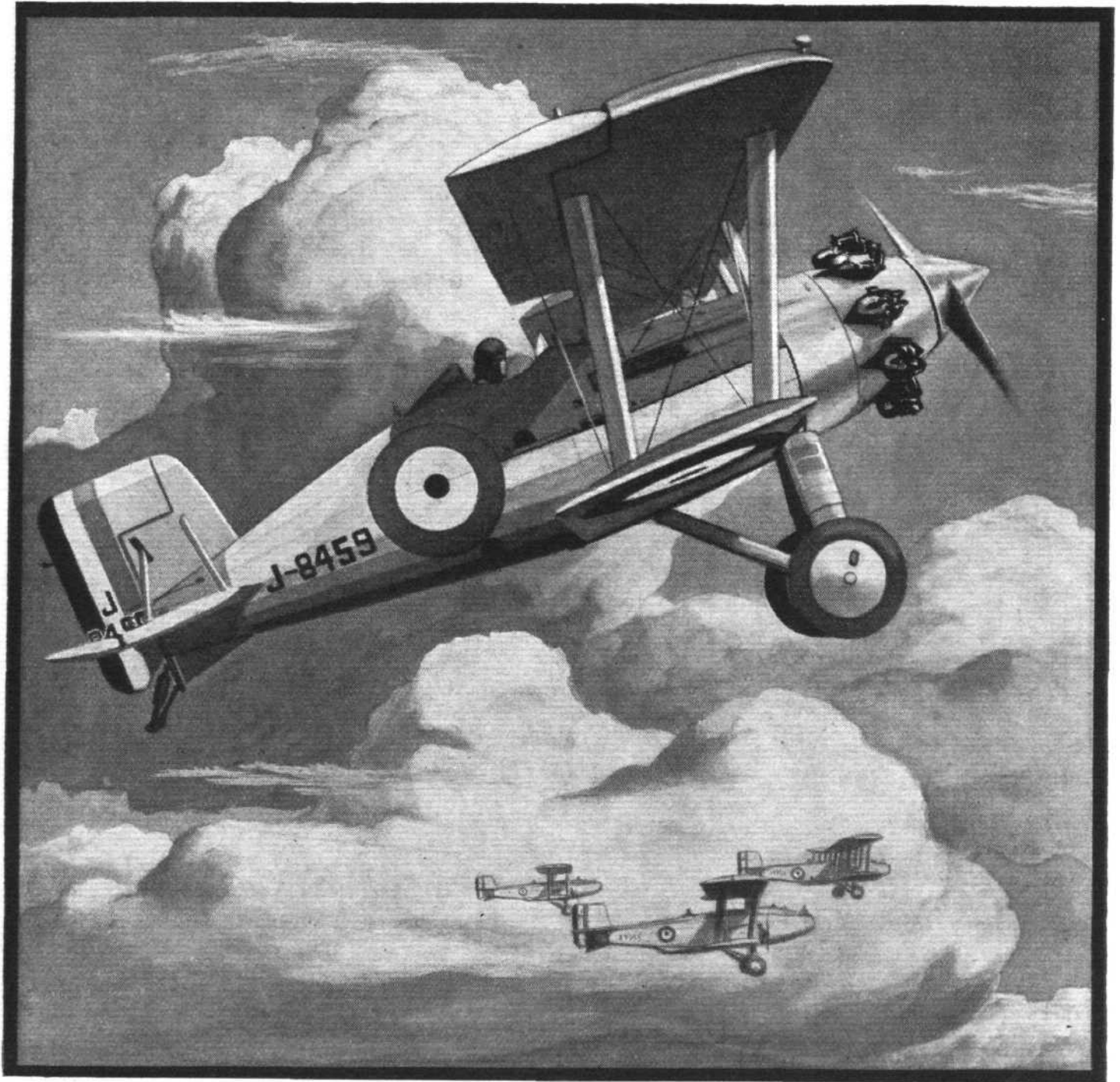
Captain Rattray, M.B.E., who left England on December 5th, flying a "Cirrus" Mark III. engined "Moth," has arrived at Accra on the African Gold Coast. The following extracts are from his cables sent on arrival at the Gold Coast on January 17th:—

CABLEGRAM

... petrol and oil performed perfectly throughout . . . climatic conditions ranging ice snow to 100 shade Golden results Golden Shell Oil pressure remained constant throughout at seventeen temperature variation never more fifteen maximum 69.

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THE ROYAL AIR FORCE FLYING-BOAT CRUISE

(Concluded from page 52.)

Log: Melbourne—Singapore

Saturday, June 30, to Monday, July 30. Melbourne.—The aircraft of the Flight were accommodated at the Royal Australian Air Force Station at Point Cooke. The aircraft of the Flight were thoroughly examined and found to be in good condition. The deposit of barnacles on the bottoms was practically nil, the special varnish on the bottoms of three of the hulls, and the white Rylard enamel on the bottom of the fourth hull, were in good condition.

The paintwork of the hull was in good condition and only minor patching was necessary.

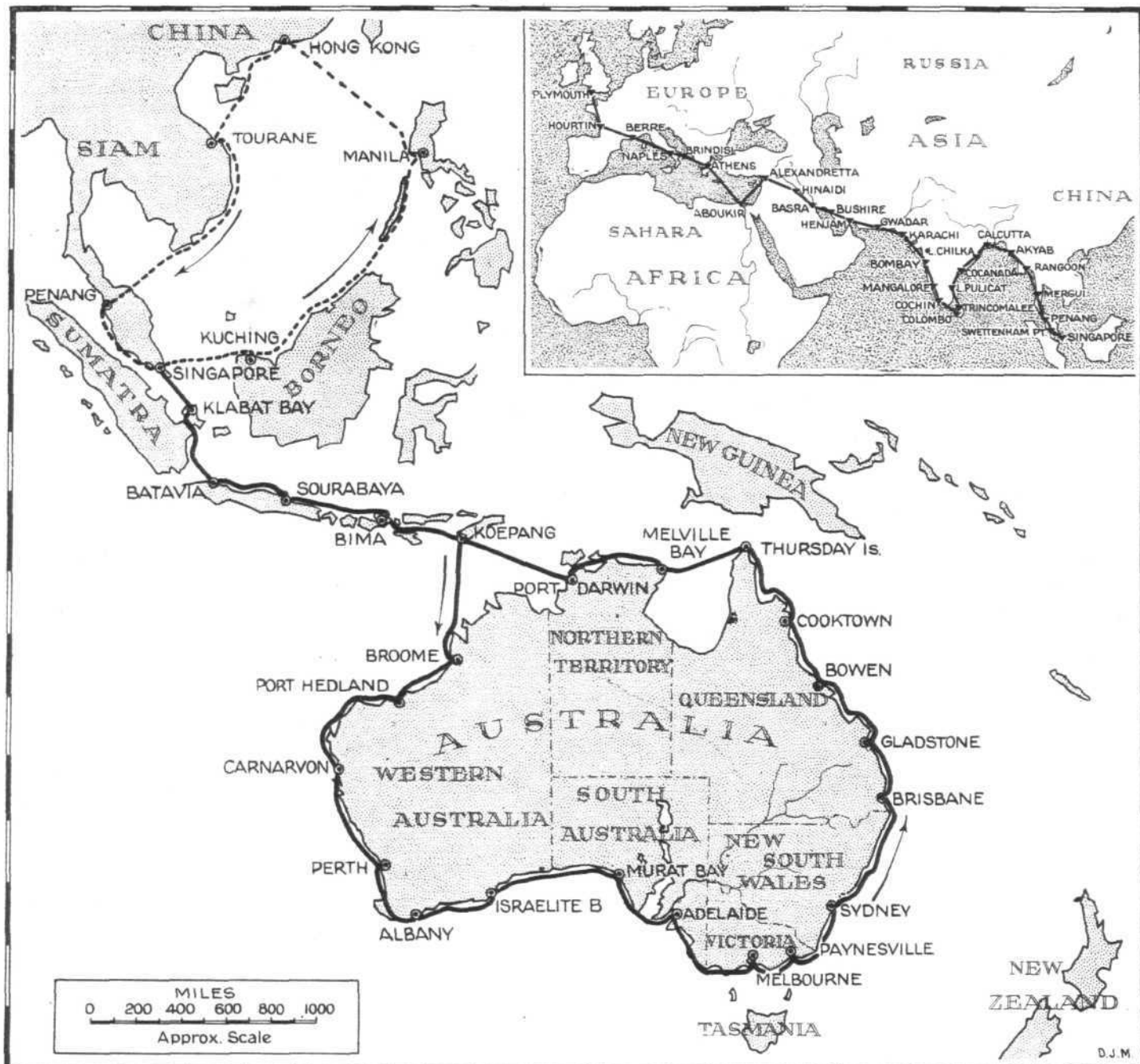
All the superstructures were in good condition. The rigging of all the aircraft was checked, and only a few minor adjustments were found to be

to public inspection at Point Cooke, and some 8,000 people travelled out from Melbourne to see them. The Victoria section of the Australian Aero Club arranged for the use of the club Moths by the officers of the Flight.

After the test flights at Point Cooke the flying-boats were refuelled on shore to 300 galls, each by pumping from barrels which had been filled from the R.A.A.F. station stock.

On the afternoon of July 29 all spares, equipment and baggage were stowed in the flying-boats, which were left ready for launching. All crews slept at Point Cooke.

Monday, July 30. Melbourne—Paynesville. 200 miles. (2 hrs. 40 mins.; 75 knots. Time 10 hrs. fast on G.M.T.)—The aircraft of the



THE ROYAL AIR FORCE FLYING-BOAT CRUISE : Map showing the route taken during the Australian section of the Far East Flight, the flying visit to Hong Kong, and (inset) the journey from England.

necessary. The engines of all the flying-boats had done about 250 hours each. Ordinary maintenance adjustments and examinations were carried out; the general condition of the engines was very good considering the running they had done. All the metal airscrews were removed, repainted, examined and balanced; they were all in good condition.

During the last week of the stay each flying-boat was given a test flight of about half an hour to ensure that everything was in order.

Throughout the stay the Air Board in Melbourne, and the R.A.A.F. at Point Cooke and Laverton, did everything possible to assist the Flight—helping in the cleaning, repair and handling of the aircraft, and the supply of stores, providing transport as necessary, making all arrangements for the remainder of the cruise in Australia, and entertaining the Flight most generously.

The flying-boats of the Flight were inspected by Air-Marshal Sir John Salmond, who was visiting Australia, and by many prominent Australians. On the last Saturday and Sunday at Melbourne the flying-boats were open

Flight were launched between 08.30 and 09.30, each taxiing and securing to the moorings to the west of the slipway at Point Cooke. Air-Marshal Sir John Salmond, the Commanding Officer and officers of the R.A.A.F. Station, Air Commodore Williams, Wing-Commander Spicer from the Air Board, Melbourne, and many more came to wish the Flight success.

The weather was fine, sky 0.6 clouded, sea calm, wind N.W. 5 knots, barometer 29.4; temperatures, hull 48 wet, 50 dry, strut 42. Moorings were slipped at 09.50, and after taxiing to warm the engines the Flight took off in formation at 10.05 in 20 secs. After circling Melbourne, escorted by a Southampton and a Moth of the R.A.A.F., the Flight left for Paynesville. The course followed was over Mornington and Flinders Naval Base, and thence down the coast, cutting off Cape Liptrop and Wilson's Promontory, to Port Albert, which was circled at the request of the Air Board at 11.45, and thence direct to Paynesville. There appeared to be sheltered water suitable for emergency landings along practically the whole route. The weather was fine except for a few light showers and low clouds near

Cape Liptrop. The wind, which was N.W. 5 knots at the start, soon increased to 10 to 15 knots, and gradually backed to S.W., whence it remained till the end of the flight. The visibility was good except in the rain, and the air was occasionally moderately bumpy. After circling Paynesville the Flight landed in formation in the western entrance to the channel between Raymond Island and the mainland at 12.40, taxied up the channel whose banks were crowded with people from the surrounding district, and secured to moorings in Lake King.

The Flight spent the next day at Paynesville. S. 1150 experienced trouble with the Primus stove, due to stripped threads in the union below the burner. This is the first time since leaving England that the cooking stove in any of the flying-boats has given trouble. (The defect was made good at Sydney.)

Wednesday, August 1. Paynesville—Sydney. 350 miles. (4 hrs. 45 mins.; 75 knots.)—At 07.00 moorings were slipped, the weather conditions being fine, sky 0-2 clouded, visibility good, lake calm, wind W.N.W. 3 knots. The Flight took off in formation at 07.15 in 28 secs. After circling Bairnsdale, course was set for Lakes Entrance and thence along the coast to Sydney. At the request of the Air Board the Flight circled in formation at Eden and the Naval Depot at Jarvis Bay. The sky became overcast near Cape Everard (08.25) and low rain squalls were seen; a light drizzle was passed through near Montague Island (10.00); at 10.45 the sky started to clear and the weather was fine, with a clear sky, from 11.00 to the end of the flight. A following wind of 5 to 12 knots was experienced throughout the flight. The sea was slight throughout the flight with a moderate swell occasionally. There are many stretches of sheltered water along the route where flying-boats could shelter in emergency.

Before the Flight left Melbourne the authorities at Sydney had asked when the Flight would arrive, and had been told that it would land at 13.00. In order to avoid arriving before this time, due to the following wind, the Flight landed at Botany Bay at 11.45 and anchored there, took off again at 12.45, circled Sydney, landed in the harbour there exactly as the 1 o'clock gun fired, and secured to the moorings in Farm Cove, where a considerable crowd had assembled to see the Flight arrive.

A formation of D.H. 9A's, D.H. 9's, and Moths of the R.A.A.F. came out to escort the Flight, one of the D.H. 9A's experienced engine failure, and had to land in the harbour, fortunately the occupants were uninjured. The Flight refuelled to 400 gallons per boat.

From Thursday, August 2 to Friday, August 20. The Flight remained at Sydney.—Sydney Harbour is very good for shipping, but the amount of traffic using it and the high land surrounding it, and the high bridge being built across the harbour makes it less convenient than many of the other harbours on this coast for the operation of a flight of large flying-boats in formation.

The mooring site in Farm Cove is very well sheltered; the moorings and the arrangements for keeping craft clear of the flying-boats were provided by the Captain Superintendent, H.M.A. Naval Establishment, Sydney; both were excellent, and no trouble was experienced. Red flags were flown from the ship mooring buoys in the centre of Farm Cove and a harbour police patrol kept all craft without passes away from the area between these buoys and the shore on the Government House side of the Cove, consequently the flying-boats were free from all risk of collision during their stay. A searchlight was available for use on the mooring site in case of emergency.

Although many members of the general public came down to see the flying-boats in Farm Cove, the interest in the cruise was less in Sydney than at any other of the large towns visited, and one section of the Press appeared surprised that the Flight had no sensational information to give.

Saturday, August 11. Sydney—Brisbane. 430 miles. (6 hrs. 10 mins.; 72 knots.)—Moorings were slipped at 06.30 hrs., the weather conditions being fine, with a slight haze, sky 0-3 clouded, slight swell in the harbour, and no wind. The Flight took off in formation up the harbour at 06.45 in an average of 40 secs., each boat carrying 500 galls. of fuel. After circling Sydney in formation, the Flight flew up the coast to Brisbane, circling Southport. The weather during the flight was fine, patches of low cloud and mist were flown over between Newcastle and Cape Hawke. The winds were under 10 knots, and mostly between W. and S.; the sea was slight to smooth, with a slight ground swell; the air was practically smooth, except over Brisbane, where it was rather bumpy. There were many places along the route suitable for the operation of flying-boats. After circling Brisbane, the Flight landed in succession in the river below Victoria Bridge and secured to the moorings there at 13.00.

The Flight stopped at Brisbane from Sunday, August 12, to Friday August 17.

Saturday, August 18. Brisbane—Gladstone. 260 miles. (4 hrs. 30 mins.; 58 knots.)—Moorings were slipped at 06.00, the weather being fine with a clear sky, calm water, and practically no wind. The Flight taxied up river, under Victoria Bridge, and took off in succession in the Milton Reach of the river at 06.15 in an average of 28 secs., each carrying 300 galls. of fuel. After taking up formation and circling Brisbane, the Flight flew up the coast to Gladstone, circling Maryborough at 08.30. There were many places along the route where flying-boats could obtain good shelter.

The weather during the flight was fine, but the visibility was poor, due largely to the haze and smoke of the burning-off operations in the country, which are general at this season. The Flight landed in formation at Gladstone at 10.45, and secured to moorings laid N.W. of the entrance to Auckland Creek, close to the edge of the channel.

Sunday, August 19. Gladstone—Bowen. 280 miles. (4 hrs. 10 mins.; 67 knots.)—Moorings were slipped at 06.00, the weather being fine, with a slight haze, sky 0-1 clouded, sea calm, wind S.W., 2 knots. The Flight took off in formation at 06.15 in 30 secs., each boat carrying 350 galls. of fuel, and after circling Gladstone, flew up the coast, passing between Curtis Island and the mainland, cutting off Port Clinton, and thence up the coast to Bowen. A "Seagull" amphibian of the R.A.A.F., going south for photographic work on the Barrier Reef, passed close to the Flight by George Point. The route was very picturesque, mostly hilly, and covered with bush; there were many islands, bays and rivers, and plenty of shelter for flying-boats. The weather was fine throughout, slightly hazy, with a clear sky, smooth sea, and light south-easterly winds.

After circling Bowen, the Flight landed there in formation at 10.25, and secured to moorings laid on the edge of the deep water to the eastward of the jetty. The following day was spent at Bowen.

No. 101 Flight R.A.A.F., with two "Seagull" Amphibians, is stationed at Bowen, and carries out photographic work in connection with the survey of the Barrier Reef by H.M.A.S. *Moresby*. The "Seagulls" have been modified to allow of photographs being taken through a hole in the hull aft of the main step. There is no slipway, and the "Seagulls" taxi up the long stretch of sandy beach on their own wheels.

The stay of the Flight at Bowen was one of the most enjoyable of the cruise.

Friday, August 24. Bowen—Cooktown. 340 miles. (4 hrs. 35 mins.; 74 knots.)—Moorings were slipped at 06.10, the weather being, sky 0-2 clouded, sea slight, wind S.E. 10 knots. The Flight took off in formation at 06.20 in 22 secs., each boat carrying 400 galls. of fuel, and after circling Bowen left for Cooktown. The course followed was up the coast to Towns-

ville, which was circled at 07.30, thence through the Hinchinbrook Channel, and up the coast to Cairns, which was circled at 09.30, and thence to Cooktown, passing over Low Wooded Island, which is the headquarters of the expedition examining the formation of the Barrier Reef. The route is very picturesque, with mountains inland, thickly wooded hills running down to the sea, and there are many openings with good shelter for flying-boats.

The weather during the flight was generally good, with southerly winds up to 10 knots and a smooth to slight sea. The Flight landed in succession at Cooktown at 10.55, the tide being low and the area of deep water available too small for a landing in formation. There were five moorings, and one farthest in was very difficult to reach at low tide, as it was shut in by sandbanks in shallow water. S. 1152 grounded lightly in attempting to taxi up to it; no damage was done, and S. 1152 then taxied to the seaward mooring and secured to it. For the next three days the Flight remained at Cooktown.

Cooktown was a flourishing seaport for the gold-fields in the district, but about 40 years ago, when the richest areas of alluvial gold had been worked out and the cost of labour had increased, the gold-fields were abandoned and the town declined. The population, which was once about 20,000 Europeans and 10,000 Chinese, is now about 300, and although much of the old town has disappeared with the passage of time and occasional cyclones, the fine streets and a few good buildings remain. There are many deserted houses, shops and hotels; the jetties are in bad repair, and there are many sandbanks in the harbour.

Tuesday, August 28. Cooktown—Thursday Island. 360 miles. (4 hrs. 15 mins.; 90 knots.)—Moorings were slipped at 06.15, the weather being fine, sky 0.5 covered with low cloud, slight swell in harbour, moderate swell outside, wind S.S.E. 10 knots, gusty and variable. The Flight taxied out of the harbour to warm the engines up, but as the sea there was judged to be rather too large for an entirely safe "take off," the Flight taxied back into the harbour and took off in succession between 06.45 and 06.55 in the channel by Pt. St. Patrick, in an average of 28 seconds, each boat carrying 400 galls. of fuel; the air conditions in the harbour immediately after take-off were bumpy.

The course followed was to Cape Bedford, Cape Melville, and thence about two miles inside the Barrier Reef to Cape Direction; Cape Grenville was crossed at 09.40 and Capt York at 10.40, and the Flight landed in formation at the mooring site near Thursday Island at 11.00. The weather during the flight was generally fine; there was a little rain off Cape Weymouth; it was slightly hazy with a visibility of about five miles, and the sky was occasionally overcast, particularly towards the end of the flight. The winds were variable between E. and S.E. up to 25 knots at 1,000 ft. and up to 15 knots at sea level; the air generally was smooth, but it was very bumpy over Thursday Island. The wearing of topees was resumed.

Wednesday, August 29. Thursday Island—Melville Bay. 350 miles. (4 hrs. 20 mins.; 86 knots.)—Moorings were slipped at 06.15 in occasional light rain showers with a 0-9 clouded sky, a slight choppy sea, and a gusty S.E. wind of 15 to 20 knots. The Flight took off in formation at 06.30 in 33 seconds, each boat carrying 500 galls. of fuel. The air was very bumpy, and owing to this and the rain, the Flight left at once without circling Thursday Island in formation. The course followed was close to Booby Island, across the Gulf of Carpentaria to Cape Arnhem, and thence direct to Melville Bay. The Flight was clear of the rain and heavy clouds in about 20 minutes, and the remainder of the flight was in fine weather with occasional clouds at about 2,000 ft. The sun on the track made drifts difficult to take and prevented the aluminium dust packets dropped on the sea being seen.

The coast-line (Cape Arnhem) was sighted about 15 miles away at 10.20, and the Flight landed in formation at Melville Bay at 10.50. Wireless touch with Thursday Island was maintained throughout the flight, and several ships sent weather reports by W.T. No shipping was sighted.

The mooring site was in the western part of Melville Bay, which is well sheltered. The lugger *McBride*, which had brought the fuel from Port Darwin and laid the moorings, was anchored near the mooring site, and the fuel, in 8-gall. drums, was transferred to the flying-boats from the lugger, partly in her small dinghy and partly in the rubber dinghies carried by the flying-boats. The Flight refuelled to 400 galls. per boat without difficulty.

Melville Bay and the surrounding district is uninhabited except for a few aborigines. If supplies are sent there, it is quite suitable as a temporary base for flying-boats. There are no facilities beyond the moorings which were laid for the Flight, but the site is well sheltered and there are sandy beaches. There are swarms of flies on shore, and many of them came off to the flying-boats, where the "Flit" gun prevented them being a serious nuisance.

Thursday, August 30. Melville Bay—Port Darwin. 370 miles. (4 hrs. 20 mins.; 85 knots.)—Moorings were slipped at 06.10, the weather being fine, sky 0-1 clouded, calm water in the bay, wind E.S.E. 1 knot. The Flight took off in formation at 06.25 in 35 seconds, each boat carrying 400 galls. of fuel. After circling Melville Bay, where the *McBride* was weighing anchor for the return to Port Darwin, the Flight left.

The route followed was to six miles S.W. of Cape Wilberforce, thence over Napier Peninsula and Elcho Island to four miles S. of De Courcy Head, across the neck of Cobourg Peninsula, across Van Dieman Gulf, Adam Bay and Shoal Bay to Port Darwin, where the Flight landed in formation at 10.40 and secured to moorings about half a mile S.E. of the steamer jetty.

The weather during the flight was fine with a few detached clouds about 1,000 ft. and a slight haze. The wind was mostly E.S.E., 10 to 15 knots, and the air was smooth except over the land, where it was sometimes moderately bumpy. The open sea was moderate to slight. The country generally appeared uninhabited except for a few wandering aborigines and a Mission Station on Crocodile Island. There are many places amongst the islands and rivers where flying-boats could obtain shelter in emergency.

The Flight was refuelled from 4-galls. tins to 500 galls. per boat as quickly as the fuel could be got to the flying-boats. Contrary to custom, and to get the refuelling done in reasonable time, the motor boats were allowed to come alongside the flying-boats; this had to be stopped as one motor boat, carrying some 120 galls. of oil, ran down wind and tide straight into the bows of S. 1152, punching a hole in her plating above the water line.

Air Marshal Sir John Salmond had left Port Darwin by air for the south early in the morning. On Friday, August 31, the Flight stayed at Port Darwin.

The hole in the bows of S. 1152 was repaired by her crew. A telegram was received from Air Board, Melbourne, congratulating the Flight on the successful completion of the cruise round Australia and wishing them good luck for the remainder of the cruise. A reply was sent thanking the Air Board for their good wishes, for the excellent arrangements made for the Flight throughout the cruise in Australia, and for the generous help they had given the Flight, ensuring its success and making the visit most enjoyable.

Saturday, September 1. Port Darwin—Koopang. 470 miles. (6 hrs. 15 mins.; 75 knots.)—Moorings were slipped at 06.30, the weather being fine but hazy, sky 0-1 clouded to the north, sea calm, wind S., 1 knot. The Flight took off in formation at 06.45 in 50 secs., each boat carrying 500 galls. of fuel. The course followed was direct to the south coast of Timor and up Semau Strait to the mooring site at Tenau, about 3 miles south along the coast from Koopang.

The weather was fine and the visibility good throughout the flight, there were occasional detached clouds about 1,500 ft.; the wind was S.E. to E.S.E.

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"NEWS has reached London that the women and children in the British Legation at Kabul were safely removed yesterday by aeroplane to Peshawar.

The transfer was carried out with the approval of the Afghan Government. The aeroplane, a Vickers-Victoria, took off from the Sharpur aerodrome, two miles from the Legation, at 10 a.m. and arrived with its passengers at Peshawar at 11.30 safely, having covered a distance of 160 miles in one and a half hour

The type of aeroplane used to bring back the Legation women and children has **two 450 H.P. engines (Napier Lion)** and is known as the Vickers-Victoria troop carrier. These machines carry 22 or 23 fully armed infantry, two pilots and a gunner, and they can also be used as ambulances. They have been frequently used to remove the sick in Iraq."

THE TIMES, 24 Dec., 1928.

The flights—Vickers-Napier aircraft carried out the journey on many occasions—were over country where a forced landing would have been disaster. With Napier engines the risks were reduced to a minimum.

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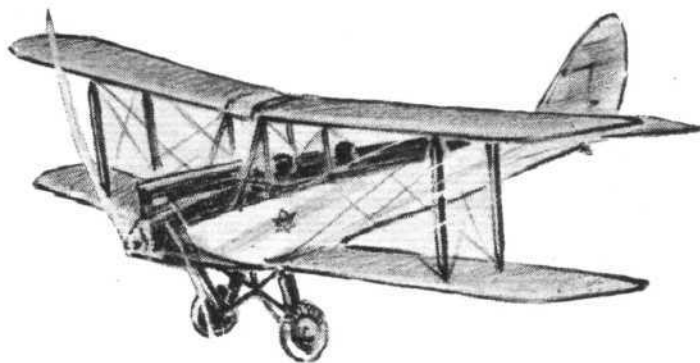
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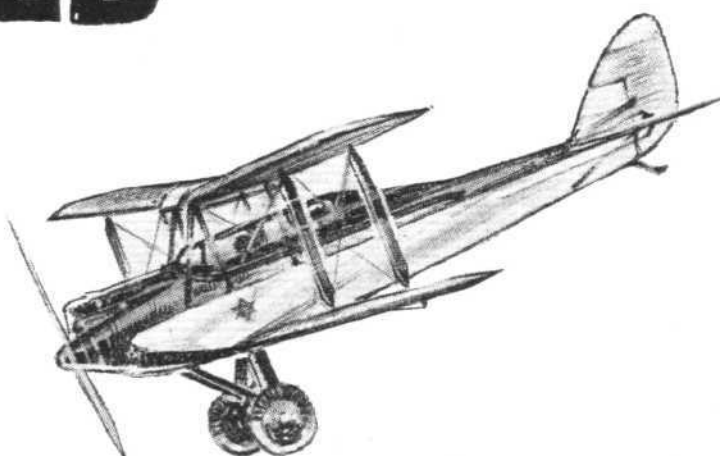
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on the surface of the sea, very light for the first 3 hrs. and then gradually increasing to 15 knots at Timor; the wind at 1,000 ft. was S.E. 5 to 10 knots for the majority of the flight. The sea was calm to slight and the water clear; many large fish were seen and many flying fish. A few birds were seen about 200 miles from land. No shipping was seen. The air was smooth until the Flight was near Timor, when it became bumpy, particularly over Semau Strait. A good landfall was made, the coast being sighted when 30 miles away. The Flight landed in formation at 13.00 at Tenau and secured to the moorings which had been used on the outward flight. It was a high spring tide and two of the mooring buoys were 3 ft. below the surface of the water, as the length of wire between the buoys and sinkers was too short for the depth of water in which they had been laid. After some difficulty the flying-boats secured to the moorings, but S. 1149 dragged her mooring into deep water as soon as the engines were stopped, and had to anchor. The mooring pendant of S. 1149, with the moorings attached, was unshackled from the bows of the flying-boat and buoyed, a boat was borrowed from the Dutch S.S. *Gemma*, which was anchored at Tenau, the moorings were weighed and re-laid as close in to the shore as was consistent with the safety of the flying boat at low tide, and S. 1149 was taxied up and moored to them; no further trouble was experienced. The following day was spent at Koepang.

The mooring site, which was the same as that used on the outward journey, proved quite satisfactory during the S.E. Monsoon, but the local authorities state that during the W. Monsoon, *i.e.*, from October to April, it would be dangerous, and recommend Pelican Bay in Semau Island.

Monday, September 3. Koepang—Bima. 310 miles. (4 hrs. 15 mins.; 71 knots).—Moorings were slipped at 05.40, the weather being fine with a clear sky, a calm sea and a S.E. wind of 1 knot. The Flight took off in formation at 05.50 in 30 seconds, each carrying 360 galls. of fuel, and flew up the Straits to Koepang, where course was set for Mount Roka, along the south coasts of Flores, Rinja and Komodo, thence up Sapeh Strait to Naru Point and Bima Bay, where the Flight landed in formation at 10.05 and secured to buoys off the pier there.

The flight from Mount Roka past Timor Island to Bima was the most picturesque since leaving Singapore, the blue haze adding greatly to the beauty of the mountains. A Dutch passenger ship of about 4,000 tons, heading for Koepang, was passed at 06.30.

The weather throughout the flight was fine, the wind generally S.E. about 10 knots, the sea was calm to slight, and it was rather hazy with a visibility of 5 to 10 miles. The height of the Flight was between 1,000 and 2,000 ft., and at this height the air generally was smooth with occasional bumps near the land, and it was moderately bumpy over Bima Bay.

The moorings were closer together and nearer the shore than on the outward flight; this arrangement was more convenient and no trouble was experienced.

Tuesday, September 4. Bima—Sourabaya. 375 miles. (4 hrs. 55 mins.; 76 knots).—Moorings were slipped at 05.45, the weather being fine with a 0.1 clouded sky, a calm sea and no wind; there were patches of mist on the low-lying parts of the land. The Flight took off in formation at 05.55 in 42 secs., each boat carrying 400 galls. of fuel, and left for Sourabaya. The route followed was to the entrance of Bima Bay, Pakijongan Point, Agar-Agar Point, Bungkulun Point, Cape Sedano, China Point and Sourabaya.

The weather during the flight was fine with winds from S.E. to E.N.E. 0 to 15 knots. The sea generally was slight except when crossing the Straits, when it was moderate. It was rather hazy, but the visibility was never less than 5 miles. Shortly before reaching Sourabaya the Flight was met and escorted in by a formation of three Brandenburg twin float, two-seater seaplanes of the Netherlands Navy. The Flight landed in formation off the Air Station at Sourabaya at 10.50, taxied up the long approach channel to the buoys used on the outward flight and secured to them.

From Wednesday, September 5, to Saturday, September 8, was spent at Sourabaya.

Sunday, September 9. Sourabaya—Batavia. 370 miles. (4 hrs. 45 mins.; 78 knots).—All crews were on board the flying-boats at 04.30 to get the boats ready for flight and to have breakfast. Moorings were slipped at 05.30, and the boats taxied down the approach channel into the open. The

FAR EAST FLIGHT—ROYAL AIR FORCE Table of Statistics

Place.	Date of Arrival.	Distance from previous Port, Nautical Miles.*	Time.†	
			Hrs.	Mins.
Singapore
Klabat Bay ..	May 21 ..	215	3	20
Batavia ..	May 23 ..	320	5	45
Sourabaya ..	May 25 ..	370	6	0
Bima ..	May 28 ..	375	5	40
Koepang ..	May 30 ..	310	5	20
Broome ..	June 1 ..	470	6	55
Port Hedland ..	June 3 ..	260	3	30
Carnarvon ..	June 6 ..	495	7	55
Perth ..	June 7 ..	460	6	00
Albany ..	June 15 ..	270	3	50
Israelite Bay ..	June 19 ..	330	4	30
Murat Bay ..	June 20 ..	515	7	10
Adelaide ..	June 22 ..	350	5	15
Melbourne ..	June 29 ..	475	6	20
Paynesville ..	July 30 ..	200	2	40
Sydney ..	August 1 ..	350	4	45
Brisbane ..	August 11 ..	430	6	10
Gladstone ..	August 18 ..	260	4	30
Bowen ..	August 19 ..	280	4	10
Cooktown ..	August 24 ..	340	4	35
Thursday Island ..	August 28 ..	360	4	15
Melville Bay ..	August 29 ..	350	4	20
Port Darwin ..	August 30 ..	370	4	20
Koepang ..	September 1 ..	470	6	15
Bima ..	September 3 ..	310	4	15
Sourabaya ..	September 4 ..	375	4	55
Batavia ..	September 9 ..	370	4	45
Klabat Bay ..	September 14 ..	275	3	30
Singapore ..	September 15 ..	235	3	0
Totals	10,190	144	5

* Actual track flown from port to port exclusive of distance flown circling towns or picking up formation.

† Average flying time per aircraft, exclusive of all engine running on water and land.

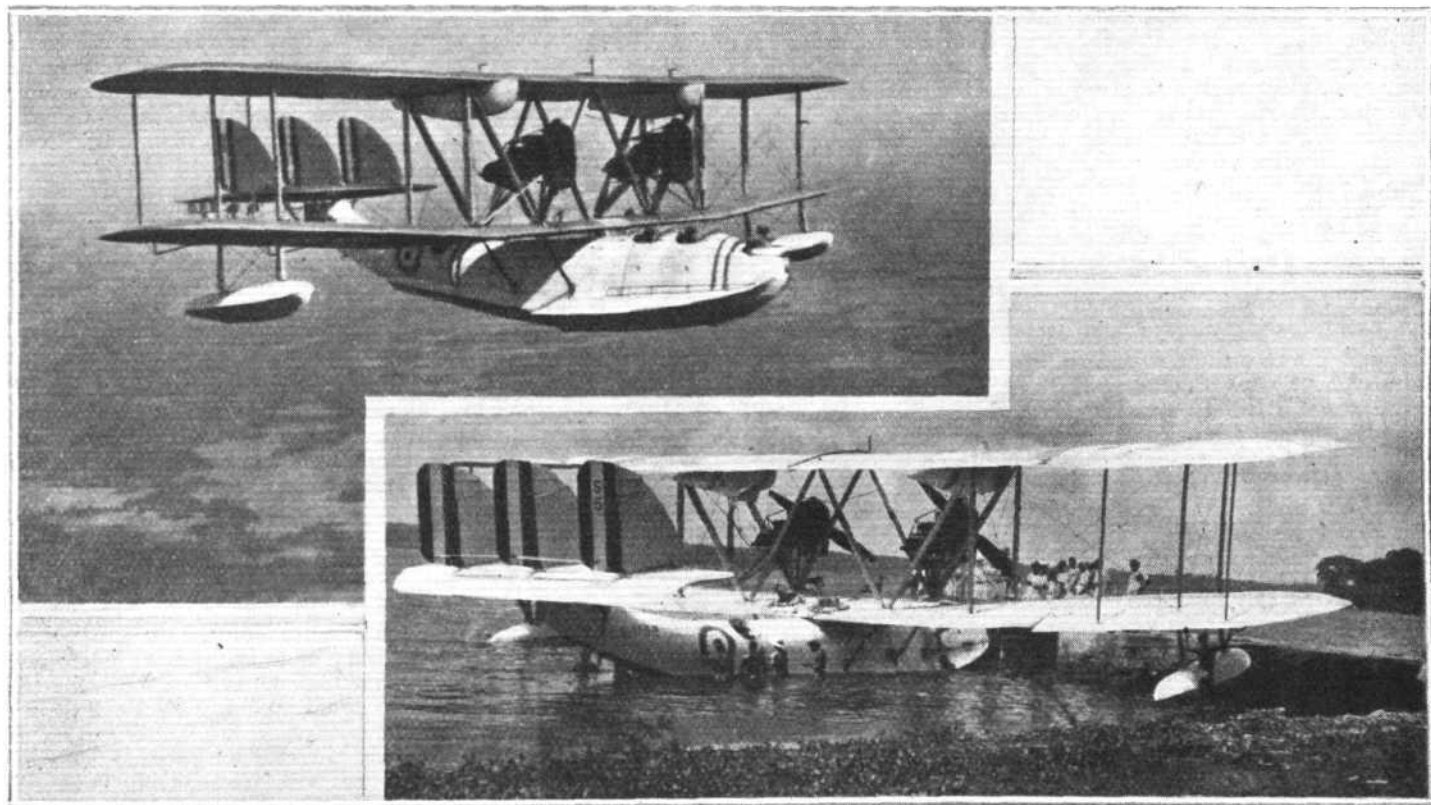
The average ground speed was 72 knots. Average flying time per aircraft during the cruise: 144 hrs. 5 mins.

Average flying time per aircraft on local flights between leaving Singapore and returning there: 1 hr. 15 mins.

weather was fine with a little cloud near the horizon and a slight haze; the sea was calm and the wind S.W. 5 knots. The Flight took off in formation at 05.50 in 33 secs., each boat carrying 400 galls. of fuel and flew up Sourabaya Strait to Panak Point, thence to Cape Janom, Inderamayu Point, Sedari Point, Krawang Point and Batavia where the Flight landed in succession in the harbour of Tandjoeng Priok at 10.35, and secured to the sterns of the four refuelling lighters which were moored to the middle four of the west line of ship buoys in the harbour.

The weather during the flight was fine and the sea slight to moderate, it was rather hazy, with fair visibility, the average height of the Flight was about 2,000 ft. where the wind varied from S. to E.S.E. 0 to 15 knots, and the air was smooth. There were a few clouds occasionally at 1,000 ft.

Refuelling to 380 galls. per boat was carried out on landing, the only trouble



THE ROYAL AIR FORCE FLYING-BOAT CRUISE: Top—One of the Supermarine-Napier metal-hull flying-boats, as employed in this Far East flight, flying over the land between Akyab and Rangoon. Below—Some of the non-paying passengers (barnacles) being scraped off the hull of one of the flying-boats at Trincomali, Ceylon.

of any sort experienced was due to the tar on the decks of the lighters; in the hot sun this was partly melted and care was necessary to avoid carrying tar on the soles of shoes on to the flying-boat, further, any petrol getting on to the deck—due to spillage or leaky tins—dissolved the tar which ran down into the sea and stained the white hull of the flying-boat; the stain was difficult to remove. The Flight remained for the next four days at Batavia.

Rear-Admiral A. ten Broecke Hoekstra (the C.-in-C. of the Dutch Naval Forces in the East Indies) and Commander Olivier of his staff went for a 35-min. local flight in S. 1149. On Tuesday, the Dutch cruiser *Java* moored in the harbour close to the Flight, and remained there till after the Flight left; she carried two Brandenburg seaplanes amidships, and these were hoisted out by derricks for practice flying.

Friday, September 14. Batavia—Klabat Bay. 275 miles. (3 hrs. 30 mins.; 79 knots.)—Moorings were slipped at 05.50, the weather being fine with a slight haze, 0.4 clouded, wind S.S.E. 2 knots, and slight swell. The Flight took off in succession at 06.00 in an average of 40 secs., each boat carrying 380 galls. of fuel, and left for Klabat Bay, escorted for the first part of the flight by a Dornier Wal. The route followed was to First Point, Sumatra, thence to the mouth of the Jering River and direct to Klabat Bay where the Flight landed in formation at 09.30, and secured to the buoys there.

The weather during the flight was fine with occasional clouds at 1,500 ft. to 3,000 ft.; the height of the Flight was about 1,000 ft. till near Banka Island, and then 3,000 ft. for crossing the land; the wind was S.E. about

10 knots, when the Flight was at 1,000 ft., and about 15 knots at 3,000 ft. The sea was slight to moderate.

Saturday, September 15. Klabat Bay to Singapore. 235 miles. (3 hrs.; 78 knots.)—Moorings were slipped at 06.40, the weather being fine, sky 0.2 clouded, sea calm and wind S.E., 5 knots. After warming engines and 5 mins. delay for tightening a magneto in the port engine of S. 1149, the Flight took off in formation at 06.55 in 30 secs., each boat carrying 300 galls. of fuel, and left for Singapore. The course followed was to Tg. Jane, across the equator to Kentar Light and thence between Bulan Island and Pulo Batam to Singapore. The weather was fine with a S.S.E. wind of 15 knots and a moderate sea for the first hour, the wind then changed to the west and the sky became overcast with low clouds and poor visibility. From 08.45 to 09.30 there was a S.W. wind of about 15 knots, and many heavy rainstorms were seen, the worst of these were avoided by small alterations of course, the weather then cleared. After circling Singapore Town the Flight landed in formation on the Johore Strait off the site for the seaplane base at 09.55. S. 1152 taxied in and was brought ashore on her launching chassis at once, the remainder of the Flight secured to moorings temporarily and were brought ashore in turn. The Flight was met by the A.D.C. to H.E., The Officer Administering the Government, H.E. The General Officer Commanding (Maj.-Gen. Sir C. C. van Straubenzee) and Senior Naval Officer (Capt. Mackworth).

On September 19, a cable was received from the Secretary of State for Air (Sir Samuel Hoare) congratulating the Flight on the cruise, and a reply thanking him was sent.

PIONEERS GETTING TOGETHER

It has now become permissible to refer in detail to the recent transaction whereby two of the pioneers of the British aircraft industry have joined a third, and in so doing have produced a combination which should play an important part in the future history of British aviation. Mr. A. V. Roe and his associate of many years, Mr. John Lord, have become interested in the old-established firm of S. E. Saunders, Ltd., of Cowes, and a reorganisation has taken place which should give the undoubted talents of all concerned full scope, to the mutual benefit of the firm and of British aviation in general.

Many of the "home" readers of FLIGHT will doubtless be familiar with the past achievements of most of the people concerned in the constitution of the new alliance, but for the benefit of our many readers abroad, and in the various parts of the Empire it is thought that a few explanatory notes may not be without interest.

The firm of S. E. Saunders, Ltd., is an old and honoured one in England. If we point out that it will be able to celebrate its centenary next year, there will be no need to stress the point further. The original business of the firm (which is still carried out) was boat building, and it may be pointed out that S. E. Saunders, Ltd., is one of the two firms which build the lifeboats for the Royal National Lifeboat Institution. For many years also S. E. Saunders has been prominent in the production of high-speed motor craft, of which a number of successful types have been turned out. As an instance of the standing of the firm, one may quote the fact that Mr. Saunders holds the Royal Warrant. It was, perhaps, natural that with his experience of surface craft Mr. Saunders should early become interested in marine types of aircraft, and it may be recalled that he built one of the first, if not the very first, flying-boat hull to be produced. An early success was the hull of the Sopwith "Bat Boat," with which the late Mr. Hawker won the Mortimer Singer Prize in 1913. This machine was an amphibian, and must have been the first machine of this type to be produced in England. The works at Cowes have continued to produce aircraft on and off ever since, and all those of original design have been marine aircraft, so that the fact that under the new arrangement this type will form the main object of the firm's aircraft activities, will be in keeping with the traditions of the company.

As now constituted the firm of S. E. Saunders, Ltd., will have as president Mr. S. E. Saunders, while Mr. A. V. Roe and Mr. John Lord will be joint managing directors, Mr. Roe looking after the design and technical side, and Mr. Lord after the commercial. General manager and a director will be Mr. H. E. Broadsmith, and on the board of directors will also be Mr. H. S. Saunders and Captain D. Nicolson. The chief designer will be Mr. H. Knowler, who has been in charge of the Saunders' design staff for a considerable period.

Mr. A. V. ROE, as all the world knows, is one of the earliest pioneers of British aviation. Unlike many of the pioneers of other countries, he has not only maintained his keen interest in aviation, but what is, perhaps, even more remarkable, he has retained all the youthful enthusiasm which marked his earlier career, and has kept up to date in his ideas and views. Those who know him well are aware that "A.V." has for quite a long time been wishing to test out certain ideas of his own on the subject of flying-boats, and it is to be hoped that he will now have the opportunity.

MR. JOHN LORD has frequently been described as "the most popular man in aviation," and certainly he has hosts

of friends in the aviation fraternity, not only of Great Britain, but in nearly all the countries of the world. His association with "A.V." dates back to the earliest days of Roe's aeronautical career, and with Mr. Roe he formed the first limited company towards the end of 1912. The association of these two has never been interrupted since, and it is good news that it is to continue in the future. As Mr. Lord will look after the company's commercial affairs, he will come in contact with many of his old friends, and will, we feel sure, make many new friends.

MR. H. E. BROADSMITH, who will be a director and general manager of the company, served his apprenticeship at the Lancashire and Yorkshire Railway Works, and later learned marine engineering at Esplen & Sons, of Liverpool. In 1912 he joined the drawing office of A. V. Roe and Co., and in course of time transferred to the works side, becoming first assistant works manager and later works manager. In 1919 Mr. Broadsmith went to Australia, and there built a number of machines as well as carrying out for the Australian Commonwealth Government an investigation relating to the suitability for aircraft construction of Australian timbers. Mr. Broadsmith has also designed several types of aircraft, so that he is thoroughly familiar with the design as well as the shops side of aircraft production. In Australia he designed and built successful light 'planes, while after his return to England in 1925 he was assistant designer at the Avro works at Hamble.

CAPT. DAVID NICOLSON was trained as a naval architect and marine engineer. During the War he went to France with the Highland Light Infantry, was wounded, and ultimately returned to England in 1915 and joined the R.N.A.S. At Felixstowe he worked under Commander Porte on flying-boats, and after a time was sent to London headquarters, where he started with the production and inspection of flying-boats. Early in 1918 Capt. Nicolson was sent to Northern Area Headquarters, still in charge of production and inspection of flying-boats, and at the end of the War he returned to the Air Ministry as chief production officer in charge of flying-boats and seaplanes, and also took over costing. He left the Air Ministry in 1923 and joined the board of S. E. Saunders, Ltd.

Under the new arrangement, the firm will carry on, develop and extend its present business, which, as already mentioned, includes, in addition to aircraft design and construction, boat and yacht building, the production of high-speed motor boats both for sport and for use in connection with the operation of flying-boat passenger services. The famous sewn plywood known as "Consuta" is another branch of the firm's activities which promises to develop, but all forms of ply construction, with such diverse materials as metal, cork and wood, are undertaken.

S. E. Saunders, Ltd., produce, in addition to craft of all kinds, their own small auxiliary engines, and, although not primarily intended for work in connection with marine aircraft, doubtless many uses could be found for them in this connection.

On the aircraft side, which interests us most, it may be stated that the policy of the firm will direct its efforts mainly to the marine side, which will include not only the aircraft themselves, but also surface craft used in connection with servicing the aircraft. It should be recollected that the firm has not only a seaplane base, but also an aerodrome on the Isle of Wight, so that as occasion arises, there is no reason why landplanes should not be catered for also.



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The Avro 504.N. fitted with Armstrong Siddeley Lynx engine and either wheels or floats.

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Note:—The Armstrong Siddeley Geared Centrifugal Supercharger was the first device of its kind supplied to the Services and has now been in use for three years.

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constructors and pioneers of all-steel aircraft, employ over 1,000 workpeople at Whitley, near Coventry. Here were designed and built the Imperial Airways' Argosies, the steel Siskins, Atlas and A.W.A. 14's for the Royal Air Force, and here, too, is a school for training pilots under the R.A.F. Reserve Scheme.

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EDDIES

AVIATION has a great vogue in America, and upon all sides it is already a general and favourite topic for serious discussion. Its popularity crops out in many directions, and "A. D. C." in the *Daily Mail*, the other day set out the following amusing examples in this connection:—

America has already begun to link up food and aviation.

In a restaurant adjoining Curtiss Field—the counterpart of the Croydon air port—you do not ask for an omelet; you ask for a crash.

If ham and eggs be your choice you demand a three-point landing. Bread and butter becomes a side-slip, and sausage is disguised as a ground loop.

A tail skid is nothing more serious than a lamb chop.

And New York already has a Graf Zeppelin Coffee Shoppe!

WHAT wonderful institutions are the ancient City Companies of London! They are well the envy of the world for their antiquity and quaint customs, the latter often imitated in more modern creations, but always lacking somehow the real spirit of age which they seek to assume, resulting in a mere parody. Yet in a dignified way old companies are not so old as to refuse to move with the times when adequate reason is forthcoming for the grafting of modern tendencies, ideas and development upon their genealogical tree of existence—always provided that the development is the outcome of refinements and advances pertaining to the art or industry which they represent.

PERHAPS one of the most live ancients in this respect may be classed the Worshipful Company of Coach Makers and Coach Harness Makers—to give them their full title—the recent Masters of which, with the consent of their Court, have avoided the risk of becoming more or less moribund by recognising that the art of coach and harness making as accepted for so many generations is fast becoming a dead letter, and in their place has emerged a great new industry of stupendous moment directly associated with and part of their constitutional objects, the building of motor-car coach work for small and large vehicles, a growth far beyond anything that in the olden days the most imaginative mind could have visualised.

THIS new phase was practically recognised some ten or more years ago, when under the enlightened Mastership of Professor White, backed by Lieut.-Col. Milliner, it was decided to not only invite Liverymen to join from the motor car body-building trade, but to actually advocate their joining up, with the result that within a few years the Company, originally conceived and in active working order before A.D. 1631—receiving its Charter in 1677, one William Bussey being the first Master—quickly passed from what might perhaps be viewed as drifting towards senile decay, by reason of its circumscribed views of its functions, to renewed prosperity from the fresh blood and vigorous life thus introduced.

AND now the Company, under the present Mastership of William James McCormack, of Dunlop fame, is going strongly ahead, as there is nothing like success to beget success, and with the prospect of that very popular pioneer in automobilism, Sir Edward Manville as the next Master, the membership should indeed hum along merrily.

PROBABLY there are some who would say:—"And what has all this to do with aviation?" Well, I'm coming to that. Just as the motor body building inaugurated a new era in the Ancient Company's career, so it has been decided to add a still further graft to the genealogical tree by gathering in all and sundry suitable and eligible candidates connected with the aviation world, inasmuch as it is now recognised that coach or bodywork of aircraft has been, and will be, playing a very great part in inducing the millions to join in air travel, and thus further enlarge the scope of the art of coach-building to the requirements of luxurious passenger craft of the air. With the growing tendency, therefore, of this new infusion, it may well be that membership will so rapidly expand that the brake will even have to be applied to prevent the overcrowding of this historical Institution. Therefore it behoves those who would wish to enter the fold not to hasten too slowly to intimate their desires lest they find themselves in a waiting queue outside the closed doors.

By way of emphasis that this view in regard to aviation work is no introduction of a few months back, it is to be remembered that the Coach Makers Company was one of

the first public bodies in this country to recognise and honour the achievement of M. Blériot when he flew the Channel in July 25, 1909. M. Blériot being at the time, upon the proposition of Professor White, unanimously elected an honorary member of the company, Professor White, in view of the shrinking of old coachwork, adapting, in support of his proposal, the company's motto of *Surgit post nubila Phæbus* to "Behind the depression of the clouds rises the Sun of Automobilism and Aviation." So that the Company is more than justified by its foresight in now further seeking the suffrage of those aeronautically inclined.

SIR SAMUEL HOARE last week, speaking at Wednesbury upon political matters, before entering upon politics, paid a well-deserved appreciation to the splendid work effected in Afghanistan by the R.A.F. Emphasising that during his five years' official connection with British flying, his office had been conspicuously free from political controversy, he said that, although he had done everything to strengthen our air defences, he had never ceased his efforts to make the aeroplane a benefit, not a curse, to the world. Continuing, Sir Samuel said that in the last few weeks we had had a dramatic instance of the peaceful and beneficial uses to which this new invention could be applied. Flying at 100 miles an hour over mountains otherwise almost impenetrable, in the teeth of snow and winter storms, landing in Kabul amid the fire of the rival armies, the Royal Air Force had successfully transported to safety 140 citizens—men, women, and children—of 10 nationalities. Was there ever a better or happier example of the beneficial use to which the aeroplane could be applied? Suppose that at the beginning of the Indian Mutiny aeroplanes had been available to rescue the women and children in the beleaguered posts. Would not many lives have been saved and great calamities avoided? The evacuation of Kabul by air had two lessons to teach. The first was that of the mobility of air power, and the second was that the aeroplane, if properly used, could be made an instrument of real help and benefit to the British Empire and humanity at large.

AND so say all of us! Magnificent.

IN emphasis of Sir Samuel's eulogy of aircraft's possible great and peaceful service to mankind, details of the recent conveyance by air of anti-diphtheritic serum to the infected Peace River Colony, away in the wilds of the Canadian N.W. Territories, as set out in *FLIGHT* for January 10, on page 34, are very significant.

SPEAKING of the Kabul rescues, it is a little quaint that, although the rebel leader, or new king (or whatever Bachai Sachao, *alias* Habibullah Khan, may at the moment stand for), and his followers refuse to accept the reforms put forward by Ex-King Amanullah as being of Western origin, they are not backward in availing themselves of up-to-date Western facilities in other directions which help them in their own ambitions—to wit, their early seizure of the Kabul aerodrome with all its possibilities.

WHEN experts disagree they generally disagree wholeheartedly, and the case of the Channel Tunnel "to be or not to be," is no exception. Apparently, the conquest of the air is likely to be used to put forward an even greater argument *against* than any hitherto adumbrated. Here we now have the views of Lord Haig, Lord Wolseley, Gen. Brackenbury and Sir Coleridge Grove, as set out by their personal friend, Sir Guy Fleetwood Wilson, in which he states emphatically that shortly after peace was declared, when Lord Haig and he were lunching together at their club, in reply to a direct question, condemned the Channel Tunnel scheme lock, stock and barrel, and added that air-bombing had increased the danger, as if the Germans had reached the Channel ports they could have bombed a zone round the English entrance and poured troops into England, which was denuded of troops. The latter three experts, Sir Guy reminds one, were those who knocked the last scheme on the head.

JUST in case my reference last week to Capt. Campbell's "Napier-Arrol-Aster" car may mislead the uninitiated, it is well to amend this by pointing out that the engine is the Napier Schneider Trophy engine, and that the "Arrol-Aster" responsibility is confined to the body and chassis side of the effort.

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THE HON. LADY BAILEY'S RETURN

An official and public welcome were accorded the Hon. Lady Bailey when she landed at Croydon Aerodrome on January 16 in her Cirrus-Moth, and completed her flight round Africa. The final stage had been from Berck Aerodrome, Le Touquet, which was left at 1.14 p.m. in a strong wind. A snowstorm had swept the French coast previously and prevented an earlier start. Capt. B. Youell, an Imperial Airways pilot, flew over to the French coast in an Alpha-Avian to escort Lady Bailey in case of bad weather near Croydon. The escort proved very helpful to her after reaching Maidstone, and she was content to follow the Alpha-Avian through the Surrey Hills to the aerodrome. At 3.15 the Cirrus-Moth landed, and was surrounded by a large crowd of mechanics from the adjoining A.D.C. Aircraft Co.'s works, whose own work in the Cirrus engine had been successfully tested by the 18,000 miles' flight.

Lady Bailey was greeted by her mother, Lady Rossmore, and her two daughters, Miss Mary Eileen and Miss Noreen. Mr. F. G. L. Bertram, Deputy Director of Civil Aviation, formally welcomed her on behalf of the Air Council and the Secretary of State for Air, mentioning that Sir Sefton Brancker was only just behind Lady Bailey on an Imperial Airways machine. Lord Rossmore and Mr. Richard Westenra, her brothers, and the Duchess of Newcastle, Mrs. Westenra, and Mrs. Straker then greeted her, whilst semi-official welcomes came from Commander H. Perrin, Secretary of the Royal Aero Club, Lieut.-Colonel J. Barrett-Lennard (a director of Imperial Airways, and A.D.C. Aircraft Co. Ltd.), Major J. Stewart, of A.D.C. Aircraft Co., Ltd., Capt. Geoffrey de Havilland, Major F. G. Brackley, Air Superintendent of Imperial Airways, and Sir Alan and Lady Cobham.

Among the machines which arrived at the Aerodrome for the occasion were Capt. G. de Havilland's Coupé-Moth, Mr. G. A. R. Malcolm's Gipsy-Moth, Lt.-Col. L. A. Strange's Simmonds "Spartan" (Cirrus), Lt.-Col. G. L. P. Henderson's and Mr. L. Guinness's jointly-owned D.H. "Moth," a D.H. Moth flown by Capt. A. S. White, the Daily Mail's "Geraldine" (D.H. 61 with Bristol "Jupiter" 450 h.p. engine), and the Alpha-Avian already mentioned.

Colonel The Master of Sempill, President of the Royal Aeronautical Society, sent Lady Bailey the following message:—"Welcome home. In admiration we send you warmest congratulations on completion of your successful African tour, that has proved to the world yet again, and in the most convincing fashion, the sterling qualities of the British light aeroplane, and, perhaps more important still,

brought us to realise how large a debt we, and in particular those who follow us, will owe to gallant women pioneers."

There followed an informal reception at the Aerodrome Hotel, and, in discussing her experience briefly, Lady Bailey mentioned that a greater part of the delay between Paris and London was due to compass trouble, and as the weather was thick, it meant waiting for a very clear day.

The Luncheon

The Hon. Lady Bailey was the guest of honour at a luncheon given by the Royal Aero Club, the Royal Aeronautical Society, the Air League of the British Empire, and the Society of British Aircraft Constructors at the Savoy Hotel on January 17. There was a gathering of well over one hundred guests, representative of British Aviation, although only short notice of the luncheon could be given. The chairman was Brig.-Gen. Lord Thomson, P.C., C.B.E., D.S.O., who was the Air Minister in the Labour Government, and is chairman of the Royal Aero Club.

When introducing the Hon. Lady Bailey, he first read a telegram from Lady Astor, who regretted her inability to be present as she was in the country with her children, but congratulating so gallant an airwoman, who had broken down a lot of prejudice against women and of whom they all felt proud.

Lord Thomson then said that it was his privilege to speak for the Royal Aero Club, the Royal Aeronautical Society, the Air League of the British Empire, and the Society of British Aircraft Constructors, and he very much wanted to stress the fact that

there was no prejudice against the fair sex in aviation, and there had been no prejudice to break down. They all knew of the exploits of Lady Heath, and they had with them Miss Spooner, who had been in the last stage of the King's Cup last year, and was actually the first to reach Lympne. He had fondly wished that she might win, as her effort was one of the pluckiest performances he had witnessed. Of the heroine of the day (Lady Bailey) she had done something of which all who felt for aviation would be very proud. In a De Havilland "Moth" with a Cirrus engine, she had flown all by herself over a vast continent described by one of the greatest explorers as "Darkest Africa." She had, so to speak, just pottered around, and had proved what could be done with that new means of locomotion. She had not attempted to establish a record of speed or height, but simply used a vehicle to get from place to place, dodging about over



["FLIGHT" Photograph

The Hon. Lady Bailey with her infectious smile.



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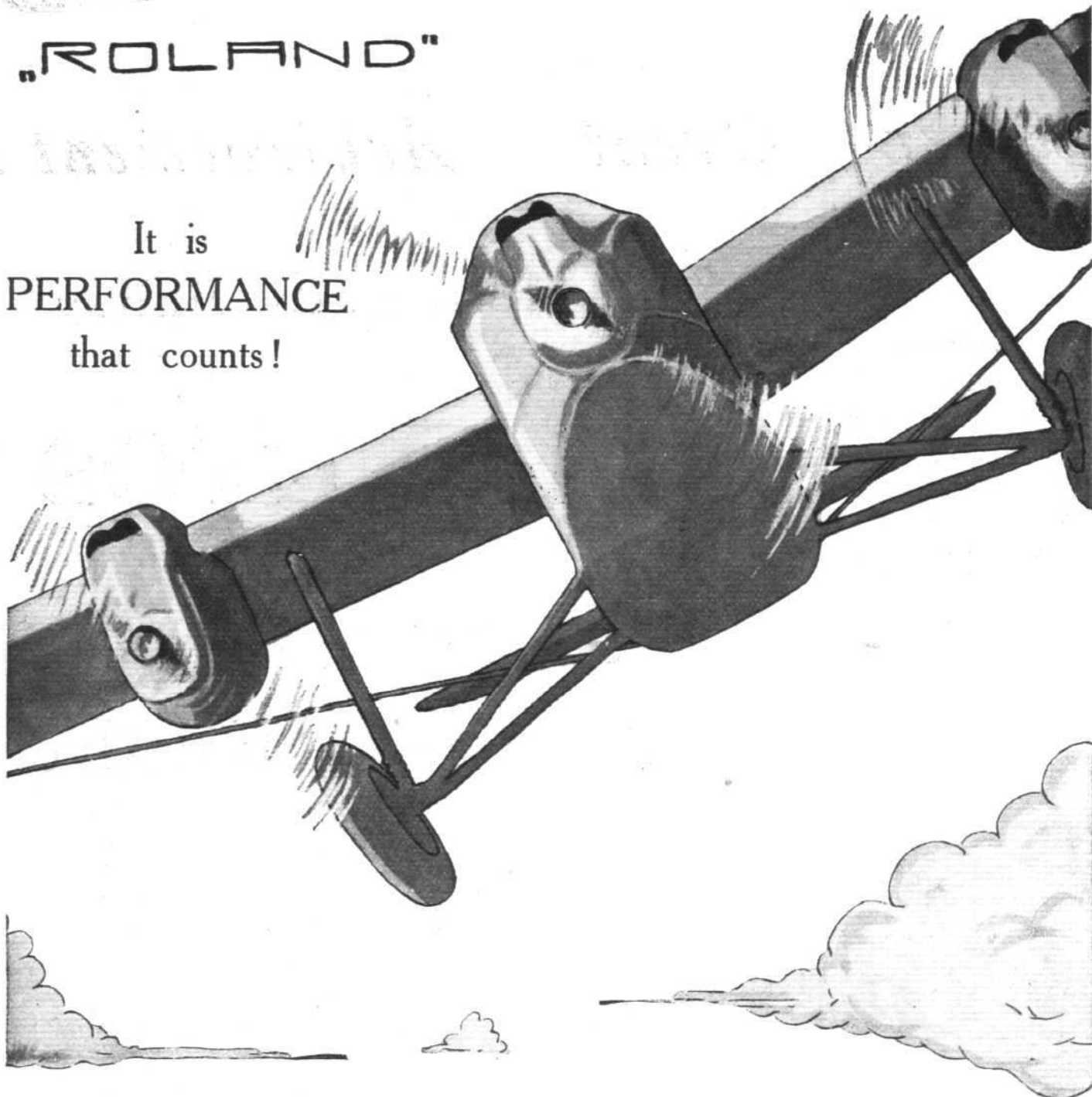
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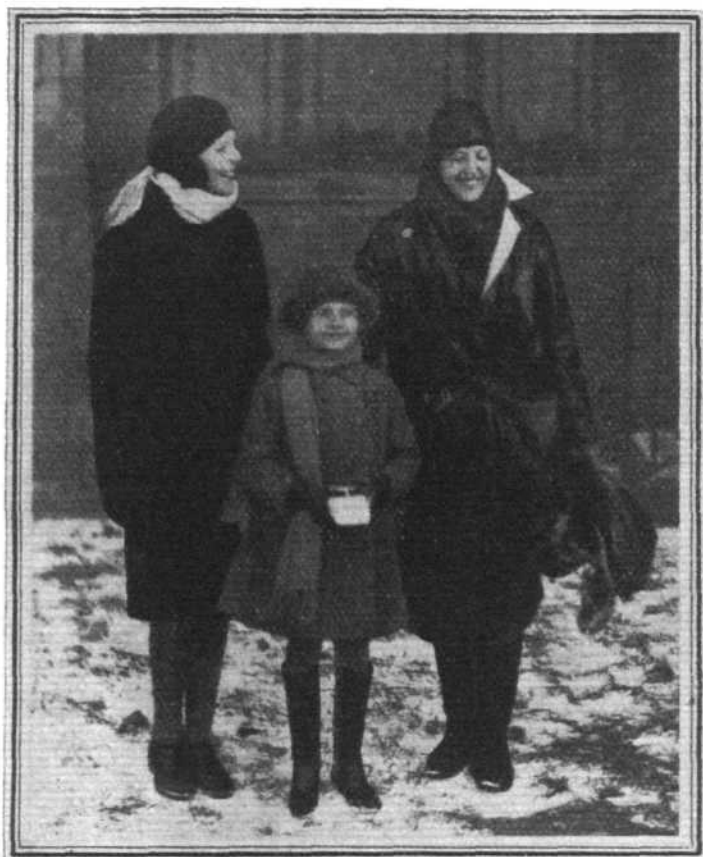
[" FLIGHT " Photographs]

End of 18,000 Miles' Solo Flight : Lady Bailey taxiing in the Cirrus-Moth at Croydon and surrounded with an admiring crowd, amongst whom were the numerous employees of the A.D.C. Aircraft Company, Ltd., whose own work had played a large part in the success of the great flight.



[" FLIGHT " Photograph]

In this general view of Croydon Aerodrome under wintry conditions are the many machines which brought their owners to greet Lady Bailey. They include Capt. G. de Havilland's Coupe-Moth, Mr. G. A. R. Malcolm's Gipsy-Moth, and Lt.-Col. L. A. Strange's Simmonds "Spartan." Also in the picture, which was taken from a "D.H." Moth piloted by Capt. A. S. White, are the "Daily Mail" "Geraldine" (D.H.61) and Alpha-Avian.



["FLIGHT" Photograph

The Hon. Lady Bailey happily united with her two daughters, Miss Mary Eileen (left) and Miss Noreen, at the Croydon aerodrome, on January 16, after the successful flight from Cape Town.

primeval, impenetrable forests where a landing might have been fatal.

She had descended in villages where English was not spoken, among unknown and almost savage tribes. Those who knew that Continent knew the risks that were ran. A great historian said that the British Empire had been built up by bold enterprise in the pursuit of game and a keen scent for the trails that led to it, but Lady Bailey had shown great enterprise, not in pursuit of game, but because of the passion within her to show what aviation could do and what a means of bringing the peoples of the world closer together provided. Just think, he commented, of a woman, by herself, doing that astounding feat. It was not an exaggeration to say that fifty years ago or even twenty years ago it would have been unbelievable. Lord Thomson then referred to Lady Bailey's arrival in Paris, where two hundred Frenchmen were met together and gave her an enthusiastic reception. They included Field Marshals and other eminent men. In conclusion he called upon Marshal of the Air Force, Sir Hugh Trenchard, to support the toast.

Sir Hugh Trenchard then rose and made a brief speech. He said that he felt pleased and honoured to be allowed to support the toast, and that one of the reasons that enabled him to do so was that neither the Air Ministry nor the Air

Force had given any assistance to Lady Bailey. Speaking on behalf of the Air Force, who realised what she had done, he could only say that the flight was worthy of honour. Such flights, which were not assisted by the Air Ministry, appealed to the Air Force very much. They congratulated Lady Bailey. Lady Bailey then expressed thanks for the honour paid her, mentioning apologetically that she was not used to making speeches. She said that the reason she wished to get to the Cape was to see her husband. She did not know whether she could do it. She did not know whether she could get to Marseilles even. However, she found everything all right and thought how interesting it would be to go on.

After reaching the Cape with only one accident which, she said, was her own fault, she felt how interesting it would be to fly back. Giving the main impressions rather than a detailed account, Lady Bailey then spoke of the ever-changing scenery, deserts, trees, vegetation, lakes, mountains and big rivers, and how the flight showed what the countries were doing on the West Coast of Africa in linking up air lines, which would make an immense difference in opening up the countries. At present everything was conveyed by boats. She felt it a pity that we had not a route down the East coast. Everybody was very kind to her. Whenever she was told of anything interesting to see during the flight she deviated to visit the place.

The machine had behaved wonderfully. She knew very little about the engine, but although she fiddled about with it every day it simply kept on going. She felt like Harry Tate in his motoring scene.

On the conclusion of her speech, Lady Bailey was presented with an aneroid barometer by Lady Elibank on behalf of the Air League of the British Empire, to express their admiration of her notable achievement as a woman and her fine contribution to the progress and science of aviation.

Sir Alan Cobham then proposed the toast of the chairman, Lord Thomson, whom, he said, he regarded as a pioneer of aviation for his work behind the scenes. Of Lady Bailey, he said that they could appreciate what she had done in the African Continent and she could be ranked amongst the great pioneers as far as Africa was concerned. Her flight had proved what a British woman could do and also what British aircraft could do.

Amongst others present were:—Sir Sefton Brancker, Sir Charles Wakefield, Sir Francis and Lady McClean, Lt.-Col. Mervyn O'Gorman, Sir Samuel and Lady Instone, Mr. Griffith Brewer, Capt. Charles B. Wilson, Col. The Master of Sempill and Mrs. Forbes Sempill, The Dowager Lady Swaythling, Commander J. Bird, Capt. G. and Mrs. de Havilland, Mr. F. Handley Page, Lt.-Col. J. Barrett-Lennard, Mr. A. V. Roe, Mr. O. Short, Major the Hon. J. J. Astor, Capt. D. Acland, Brig.-Gen. P. R. C. Groves, Mr. F. G. L. Bertram, Mr. C. C. Walker, Lt.-Col. Ivor Edwards, Lt.-Col. M. O. Darby, Sir Charles Delme Radcliffe, Mittie Lady Rossmore, Mrs. Straker, Miss Winifred Spooner, Sqdr.-Ldr. and Mrs. Hinkler, Sir Henry White-Smith, Col. Sir H. A. van Ryneveld, Sir Alan and Lady Cobham, Capt. F. Tymm, Capt. W. L. Hope, Major J. Stewart, Mr. J. E. Hodgson, Mr. Downes-Shaw, Col. J. Matthew, Major and Mrs. H. Mayo, Mr. H. E. Morris, Mr. G. N. Wilson, Dr. A. P. Thurston, Major G. P. Bulman, Col. H. W. S. Outram, Capt. Walker, Sqdr.-Ldr. Wrigley, Mr. and Mrs. Claude Grahame-White, Capt. Stevenson, Mr. M. L. Bramson, Mr. N. Hulbert, Mr. Olney, Capt. R. H. Stocken, Capt. T. N. Stack, Capt. H. Shaw, Major O. Stewart, Capt. B. Youell, Mr. R. M. Balston, Mr. Delpech, Capt. L. G. Callingham, Mr. R. S. Luen, Dr. Gerald Merton, Capt. S. J. Burt, Maj. C. C. Turner, Commander H. Perrin, Mr. A. C. M. Jackman and Capt. L. Pritchard.

New Club Pilot Appointed

FOLLOWING the resignation of Capt. C. R. Beck from the Yorkshire Aeroplane Club, Captain H. V. Worrall, D.S.C., has been appointed to the vacancy.

Cirrus Engines for Koolhoven Aircraft

THE well-known designer, Mr. Frederick Koolhoven, who now resides in Holland, has produced a 3-seater cabin light aeroplane with an extremely good performance. Mr. Koolhoven has disposed of the manufacturing licence in England, and the machines are to be fitted exclusively with Cirrus Mark III engines.

Aerodrome for Blyth?

A MUNICIPAL aerodrome for Blyth, Northumberland, has been suggested, and Air Ministry experts have been invited to inspect sites.

The Archdukes Resume

THE Archdukes Anthony and Francis Joseph of Austria-Tuscany, who made a forced landing at Dijon in their D.H. "Moth," whilst flying from London southwards, resumed their flight from Dijon on January 21 for Spain.

Flying Instruction in University

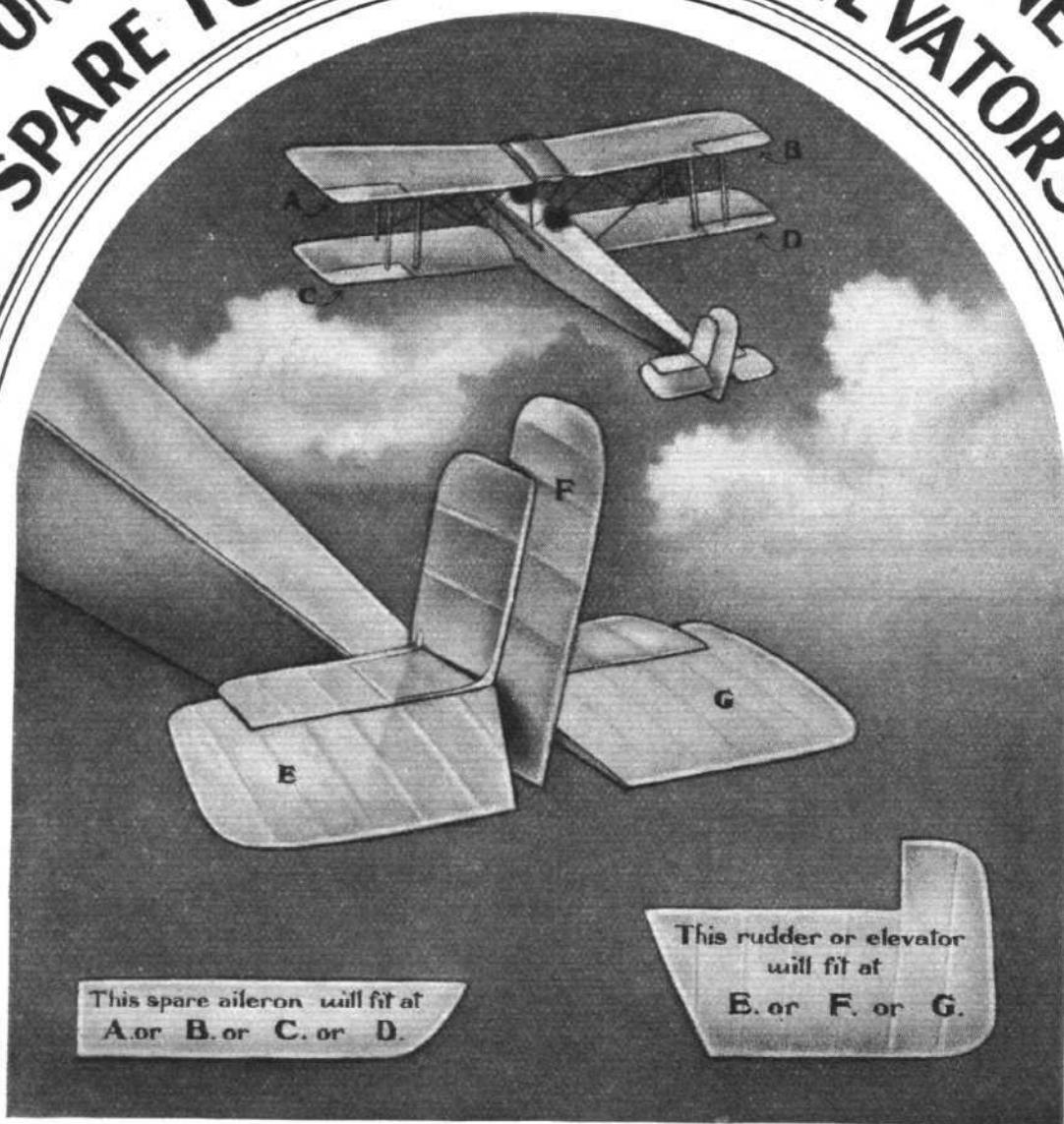
A COURSE of flying is to be given by the University of Toronto contingent of the Canadian Officers' Training Corps under the direction of the professor of the Department of Aeronautics, in the Faculty of Applied Science.

Moth Aircraft Corporation Appointments

CAPTAIN A. B. JOHNSON has been appointed sales manager to the Moth Aircraft Corporation with offices at Graybar Building, New York City. Another appointment to the same department is for Mr. W. R. Ostertag.

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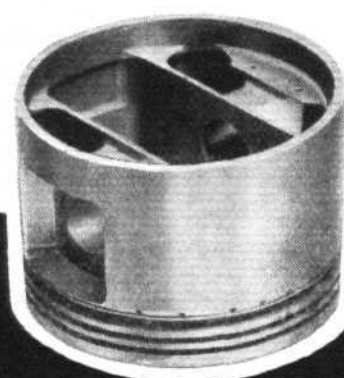
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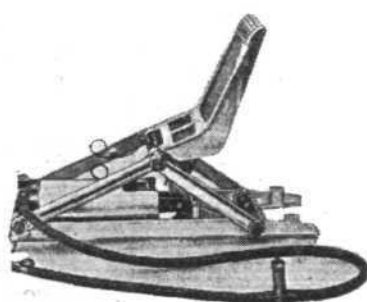
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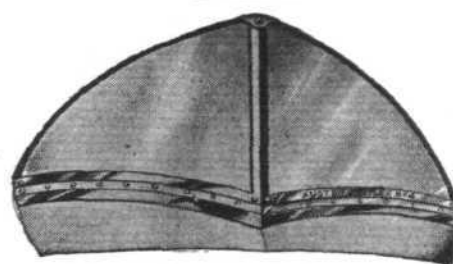
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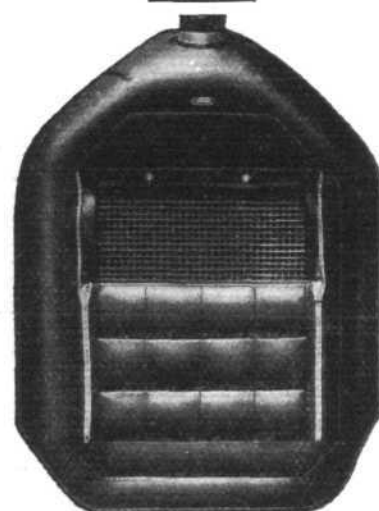


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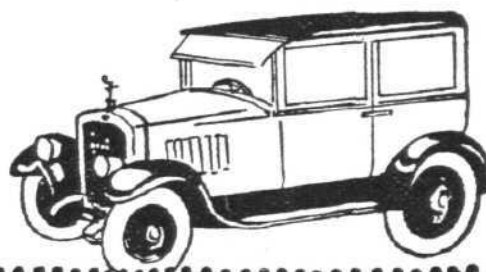
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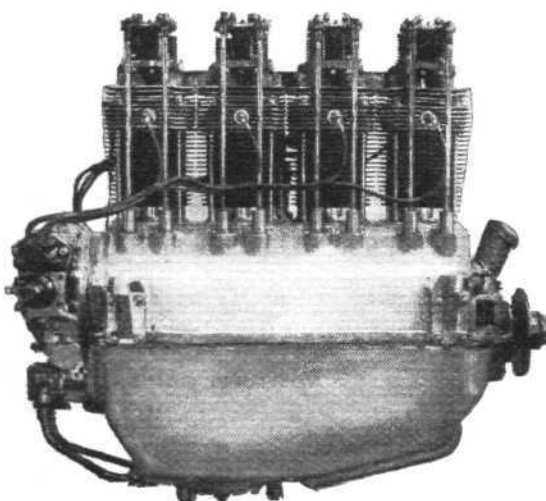


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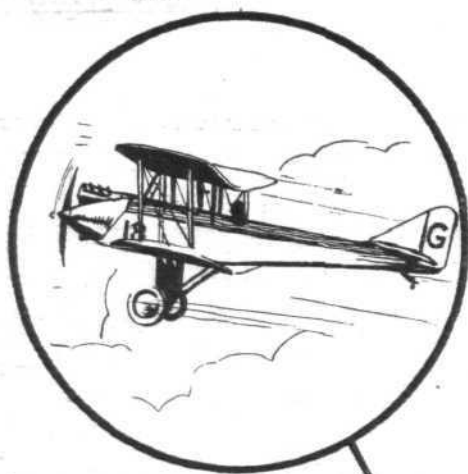


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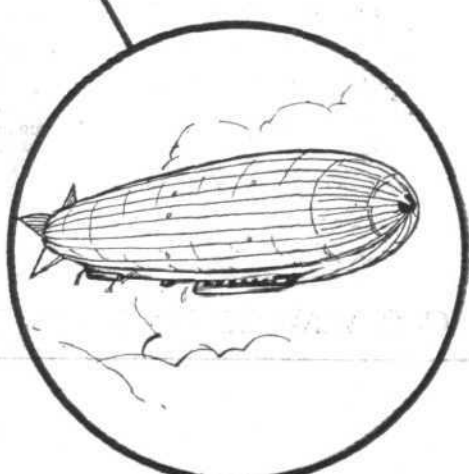
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Cinque Ports Flying Club, Lympne, Hythe. Hon. Secretary, R. Dallas Brett, 114, High Street, Hythe, Kent.
Hampshire Aero Club, Hamble, Southampton. Secretary, H. J. Harrington, Hamble, Southampton.
Lancashire Aero Club, Woodford, Lancs. Secretary, F.W. Atherton, Woodford Aerodrome, Cheshire.
Liverpool and District Aero Club, Hooton, Cheshire. Hon. Secretary, Capt. Ellis, Hooton Aerodrome.
Midland Aero Club, Castle Bromwich, Birmingham. Secretary, Major Gilbert Dennison, 22, Villa Road, Handsworth, Birmingham.

Newcastle-on-Tyne Aero Club, Cramlington, Northumberland. Secretary, J. T. Dodds, Cramlington Aerodrome, Northumberland.
Norfolk and Norwich Aero Club, Mousehold, Norwich. Secretary, G. McEwen, The Aerodrome, Mousehold, Norwich.
Nottingham Aero Club, Hucknall, Nottingham. Hon. Secretary, Cecil R. Sands, A.C.A., Imperial Buildings, Victoria St., Nottingham.
The Scottish Flying Club, 101, St. Vincent Street, Glasgow. Secretary, Harry W. Smith.
Southern Aero Club, Shoreham, Sussex. Secretary, C. A. Boucher, Shoreham Aerodrome, Sussex.
Suffolk Aeroplane Club, Ipswich. Secretary, Maj. P. L. Holmes, The Aerodrome, Hadleigh, Suffolk.
Yorkshire Aeroplane Club, Sherburn-in-Elmet, Yorks. Secretary, Lieut.-Col. Walker, The Aerodrome, Sherburn-in-Elmet.

LONDON AEROPLANE CLUB

REPORT for week ending January 20.—The following machines were in commission during the week:—G-AABL, G-EBXS, G-EBZC, G-EBMF. Instructors: Captain V. H. Baker, M.C., A.F.C., Captain F. R. Matthews. Ground Engineer: C. Humphreys. Total flying time for the week, 25 hrs. 45 mins.

Flying time during the week was very much restricted by the fog, and there were only two clear days.

Dual instruction: 16 members received dual instruction during the week, the time being 11 hrs. 45 mins.

Solo flying: 22 members flew solo during the week, the time being 14 hrs. Raffle for D.H. "Moth."—In spite of the weather there was a good attendance of members to witness the draw for the raffle of the D.H. "Moth." The whole of the tickets had been disposed of and 395 blanks were drawn before the winning disc appeared.

The winning ticket was No. 7 in book No. 66 purchased by Mr. A. F. H. Gee of Baghdad. Mr. Gee took 10 tickets in all. He has been advised of the result by cable.

Club House.—The following donations have been given towards the expense of equipping the club-house:—Mr. C. R. Fairey, £10; Mr. T. O. M. Sopwith, C.B.E., £10; Lieut.-Col. Sir Francis McClean, A.F.C., £3 3s.; Mr. F. Handley Page, C.B.E., £3 3s.; Lieut.-Col. M. O. Darby, O.B.E., £3 3s.; Mr. Claude Grahame White, £3 3s.; Mr. J. Scott-Taggart, M.C., £3 3s.; Capt. C. B. Wilson, M.C., £2 2s.; Sir Alan Cobham, K.B.E., A.F.C., £2 2s.; Mr. H. E. Perrin, £1 1s.; Sgt.-Ldr. M. E. A. Wright, A.F.C., £1 1s.; Lieut.-Col. J. T. C. Moore-Brabazon, M.C., M.P., £1 1s.; Sir Samuel Instone, £1 1s.

Members wishing to assist are requested to forward their donations to 3, Clifford Street, London, W.1.

Mr. J. W. P. Chalmers has presented the Club with a gas cooking stove. Mrs. E. E. Stammers has provided 6 pint and 6 half pint tankards.

The following Club-house Committee has been appointed:—Major K. M. Beaumont, D.S.O., J. W. P. Chalmers, T. Elder-Hearn, Captain A. G. Lamplugh, R. C. Presland, E. E. Stammers.

BRISTOL & WESSEX AEROPLANE CLUB, LTD.

REPORT for the week ending January 19.—Pilot instructor for the week, E. B. W. Bartlett. Machines in commission: (2), G-EBTV and G-EBYH. Flying time for the week: 7 hrs. 30 mins. Pupils under instruction: (5), 4 hrs. Soloists under instruction: —, "A" pilots: (4), 2 hrs. 35 mins. Passengers carried: (1), 20 mins. Test flights: (6), 35 mins.

Mist and fog have curtailed the possible flying hours of a minimum, but frost has been a friend in that we have seen more of some of the members of the Beaufort and Berkeley Hunts than we expect at this time of year.

A new member, Mr. Farquharson, made his first flight this week. We were interested by the arrival last week of Col. Strange in a "Spartan"; it was a pity that the day was uninviting as many of our members would have liked to see the machine. We have been unfortunate in losing the services, temporarily, of our ground engineer, but our ever helpful friends in the Bristol Aeroplane Company have seen us through.

The committee has decided that members of any recognised flying club residing temporarily in or near Bristol and desiring to avail themselves of the opportunity of flying while here, may do so on payment of the nominal subscription of 10s., without entrance fee, paying the same fees for flying as members of this club. The only condition made is that they bring with them their logbook, licence if any, and a recommendation as to flying ability from their club instructor.

CINQUE PORTS FLYING CLUB

EASTER MEETING.—The date for this meeting has now been fixed for Good Friday and Easter Saturday, March 29 and 30 next. The proceedings will commence with a rally terminating at Lympne Aerodrome at 12.30 p.m. on Good Friday. The remainder of Good Friday will be devoted purely to joy riding, but on the Saturday it is hoped to run two important races, the first being a handicap race for private owners entitled "Cinque Ports Handicap," in which the handicap will be governed by the engine fitted to the competitor's machine. There will be three classes, and machines in the same class will start level. The first class will be for machines fitted with Mark (1) Cirrus engine and this class will receive a start from the next class which will consist of machines fitted with Mark (2) Cirrus or Genet engines. The scratch class will be for machines fitted with Mark (3) Cirrus or Gipsy engines. There will be prizes for the first, second and third in the complete race, and additional prizes for the winner of each class, making six awards in all. In addition, it is hoped, if sufficient support can be obtained, to run a scratch race for two-seater light aeroplanes, fitted with engines not exceeding 5 litres cubic capacity. This race will be confined to entries received from manufacturers of the machines, and should prove exceedingly interesting to prospective purchasers of light aeroplanes.

HAMPSHIRE AEROPLANE CLUB

REPORT for week ending January 19.—Pilot Instructors: Flight-Lieut. F. A. Swoffer, M.B.E., and Mr. W. H. Dudley. Ground Engineers: Mr. E. Lenny and Mr. J. Elliott. Aircraft: D.H. 60 Moths G-EBOI and G-EBOH. Flying time for the week: 17 hrs. 5 mins. Pupils under instruction: (9), 11 hrs. 35 mins. Soloists: (3), 30 mins. "A" Pilots: (7), 3 hrs. 40 mins. Passengers: (3), 25 mins. Tests: (11), 55 mins.

Col. Betts and Mr. Stanfield joined the club during the week. Col. Betts made a successful first solo flight on Friday after six hours' intensive dual training.

LANCASHIRE AERO CLUB

REPORT for week ending January 19.—Flying time: 9 hrs. 40 mins. Instruction: (4), 3 hrs. 25 mins. Solo flights: (7), 4 hrs. 5 mins. Passenger flights: (3). Tests: (8), 1 hr. 20 mins.

Instruction (with Mr. Hall): Whitehouse, Gort, Eckersley, Ruddy.

Machines in commission: XD, MQ, QL, PH.

Pilots: Lacayo, Mills, Gord, Eckersley, Meads, Michelson, Twemlow.

Passengers: (With Mr. Twemlow), Mr. Garside. (With Mr. Cohen), Miss Briggs, Mr. Goodfellow, D.R.

MIDLAND AERO CLUB

REPORT for week ending January 19.—The total flying time was 18 hrs. 43 mins. Dual, 6 hrs. 35 mins. Solo, 9 hrs. 15 mins. Passenger, 1 hr. 30 mins. Test, 1 hr. 23 mins.

The following members were given dual instruction by Flight-Lieut. T. Rose, D.F.C., and Mr. W. H. Sutcliffe: L. V. Mann, J. H. Stevens, W. L. Handley, E. J. Steward, L. H. Lee, Mrs. Leigh Fernor, Maj. D. Thomson.

"A" Pilots: J. Cobb, E. P. Lane, R. L. Jackson, F. J. Steward, G. Robson, J. Rowley, C. W. Fellowes, E. D. Wynn, S. H. Smith, G. C. Jones, R. C. Baxter, H. J. Willis.

Soloists: W. L. Handley, L. V. Mann, J. K. Morton, L. H. Lee, Mr. Blake-way.

Passengers: W. L. Handley, H. Tipper, L. V. Mann, J. G. Simpson.

On Wednesday Mr. L. H. Lee passed the flying tests for his "A" licence.

NEWCASTLE-UPON-TYNE AERO CLUB

REPORT for week ending January 20.—Pilot Instructor, G. M. S. Kemp. Ground Engineer: K. C. Brown; Assistant, J. Tait. Machines: LX, PT. Flying time for week, 15 hrs. 22 mins. Instruction period ending January 20: 6 hrs. 5 mins.; "A" Pilots, 5 hrs. 12 mins.; Solo turn, 1 hr. 45 mins.; Passengers, 1 hr. 40 mins.; Tests, 40 mins.

NORFOLK & NORWICH AERO CLUB

REPORT for week ending January 20.—Total flying time, 16 hrs. 30 mins. Dual (with Capt. Houston), 3 hrs. 50 mins. Soloists under instruction, 1 hr. 5 mins. "A" licence pilots, 10 hrs. 50 mins. Tests, 10 mins. Passengers, 35 mins.

Saturday evening was the first of our monthly club dinners held at the aerodrome, and it was a great success. After justice had been done to the meal provided, Capt. Houston gave an interesting chat on "A Family of Cyclones," and having taken us all over the atmosphere and filled us all with cyclonic hot air, he cooled us all down by calmly remarking on the size of hail stones which fell in Texas or some other place out America way. These hail stones, he said, were as large as a duck egg. I don't think we have ever seen them that size in this country, but we have seen and bought recently hens eggs as large as our hail stones. However, Capt. Houston being a Scotsman and not an American, we shall accept it, and as that fact is officially recorded, there is no more to be said. The Simmonds Aircraft Co. very kindly sent a Spartan for us to try this week-end, and our members enjoyed the experience of flying in this extraordinary machine, with its interchangeable wings and tails, only the bigger ones did wish the designers had left a little more room in the front cockpit for them to expand in.

We wish to announce that we are holding our big show this year on Whit Sunday and Whit Monday, and we shall be pleased to see all comers complete with aircraft. Further details will be forthcoming in the near future.

SCOTTISH FLYING CLUB, LTD.

REPORT for period from December 24, 1928, to January 19, 1929 (inclusive) Chief instructor: Mr. R. M. Stirling, A.F.C. Ground engineer: Mr. W. Calder. Machines in commission during period: X, Moth G-EBYG—Avro Avian G-EBTY. Dual instruction: 4 hrs. 5 mins. Solo flying: 20 hrs. 45 mins. Passenger flights: 10 hrs. 30 mins. Tests: 3 hrs. 20 mins. Total: 38 hrs. 40 mins.

Instruction (with Mr. Stirling): Messrs. J. E. R. Young, A. H. Anderson, W. Carlaw, H. D. Primrose, D. K. Fairweather, J. Mitchell and A. McIlwaine.

Apart from the fact that the club was closed down for four days at New Year, our disappointing flying time during the past four weeks is entirely due to adverse weather conditions. For the first ten days of the year Renfrew was enshrouded in a heavy fog, which, at times, reduced the visibility to a few feet. On Sunday, 13th inst., however, conditions had improved sufficiently for Mr. I. C. Rushton to make a cross-country flight in G-EBTY to Donibristle, Fife, and on Wednesday, 16th, Mr. L. C. Davey and Mr. D. Barclay paid a visit to the Newcastle Club, returning on the following day, G-EBTY again being the machine employed. Instructional work, naturally, has been somewhat at a standstill, but, in the interval Miss J. Hendry and Messrs. E. R. Robertson and D. K. Fairweather have been granted their "A" licences. All are *ab initio* pupils, and are to be congratulated on completing their instruction under the trying weather conditions at this time, especially Miss J. Hendry, to whom goes the distinction of being the first lady in Scotland to become a qualified pilot. On Tuesday, 15th, the club held its annual general meeting, when the accounts for the first year's operations were submitted and a report read on the progress made. From a financial point of view, the position of the Club is considered eminently satisfactory, and the progress made in the first year is most encouraging. At the same meeting, a new General Committee was appointed, in terms of the constitution, to carry on the work of the club during the ensuing season.

SOUTHERN AERO CLUB

REPORT for week ending January 20.—Our dual Avro, G-EBYB, has been kept busy. On Saturday and Sunday the perfect weather prevailing brought many members out to fly.

Mr. Sale, who recently did his first solo after only 4½ hours dual, is now trying to hoard up solo hours with a view to getting his "A," and later his "B."

Mr. Davis joined the club on Sunday and was given preliminary instruction. Mr. D. P. H. Esler has now obtained his "B" licence.

SUFFOLK & EASTERN COUNTIES AEROPLANE CLUB

REPORT for week ending January 19.—Instructor: G. E. Lowdell, A.F.M. Ground engineers: "C," E. Mayhew; "A," G. Keeley. Aircraft: three Blackburn "Bluebirds," RE, SZ, and UH. Aerodromes: Hadleigh, Suffolk, and Conington, Cambs. Seaplane base: Brightlingsea, Essex. Flying time, 21 hrs. 15 mins. Seven members were given dual instruction (4 hrs. 5 mins.). Flights were made by eight "A and B" licensed members (15 hrs. 20 mins.). Seven passengers were carried (1 hr. 5 mins.); seven tests were made, (35 mins.).

Mr. Glen Ogilvie passed his height test for "B" licence at Martlesham and also carried out several cross-country flights.

On Saturday members had the use of the new club-house for the first time, a facility which was greatly appreciated.

The entertainment committee is arranging a dinner and dance at the Great White Horse Hotel, Ipswich, on February 7, to welcome home our president (Lady Bailey) on her return from a cross-country round Africa. So far, this is the longest cross-country accomplished by any member of the club. It has been a great relief to have both our regular ground engineers back at work, and with the longer days approaching our flying hours are on the upward move.

YORKSHIRE AEROPLANE CLUB

REPORT for week ending January 19.—Pilot instructor: H. V. Worrall, Ground engineer: R. Morris. Machines in commission: three (RF, SV;

and TB). Flying time, 10 hrs. 40 mins. Instruction (14), 3 hrs. 40 mins. "A" pilots (9), 5 hrs. 15 mins.; passengers (3), 30 mins.; test flights, 1 hr. 5 mins.

The annual ball was held at the Riley-Smith Hall, Tadcaster, on the 18th inst., when there was an attendance of about 200.

The evening was of the free and happy type usually associated with gatherings of the club, and everything went with a swing.

The committee, consisting of Messrs. H. S. Chamberlain, I. W. H. Thomson, H. R. Humphries, G. O. Wood and H. Hey, are to be congratulated on the excellent organisation and arrangements made for the comfort of the members.

FROM THE FLYING SCHOOLS

Brooklands School of Flying, Brooklands Aerodrome

REPORT for week ending January 20.—Instructor: Capt. E. A. Jones. Ground engineers: W. A. Watts, W. H. Hellon. Machines in commission, G-EBVE and G-EBWJ. Total flying time, 16 hrs. 45 mins. Soloists, 3 hrs. 25 mins.; dual, 12 hrs. 5 mins.; joy-rides, 1 hr. 15 mins.

Three new pupils have been enrolled during the week, all of whom have started their courses.

Mr. G. Bennett carried out his first solo and put up an excellent show.

Henderson Flying School, Croydon Aerodrome

REPORT for week ending January 19.—In beautiful weather at the week-end Lieut.-Col. Henderson put in five hours' dual on his Mono Avro. The Auxiliary Air Force pupils are making good progress and greatly appreciate the advantage of being trained on Avros first.

Col. Henderson has lately taught Mr. Loel Guinness forced landings, and especially landings in Laleham Park—a difficult and tricky proceeding as it is studded with trees.

Mrs. Horsey, wife of the Imperial Airways pilot, is joining the school this week; also Mr. Howard, of A.B.C. Motors, Ltd., whose engine is being installed in the Henderson Monoplane Mark II.

AIRISMS FROM THE



FOUR WINDS

R.A.F. Squadrons Reach India

No. 11 and No. 39 R.A.F. Squadrons arrived at Karachi on January 20 and after assembling their machines at the Karachi depot they will proceed to the frontier, probably to Kohat. These squadrons were formerly stationed at Netheravon and Bircham Newton.

The Lure of Africa

MR. DOWNES-SHAW, Chairman of the Bristol Aeroplane Club and a private owner of a D.H. "Moth," is contemplating a private air tour shortly through France, Spain and North Africa. He has already done considerable air touring on the Continent.

Mushrooms By Air

OVER seven tons of mushrooms have been flown from Paris to London in the Handley Page air freighters of Imperial Airways during the past few weeks. The mushrooms are gathered just outside Paris in the morning and are on sale in London on the afternoon of the same day.

Through All Weathers

THE pilot of a Handley Page air liner of Imperial Airways which arrived at Croydon from Cologne recently, reported that he had flown through over 300 miles of snow storms and snow showers.

The Graf Zeppelin

THE *Times* correspondent at Frankfurt states that Dr. Eckener has announced his plans for this year. Upon the execution of the remaining trial flights prescribed by the German experimental office for aeronautics, the "Graf Zeppelin" will probably make a long trip across the Mediterranean to Egypt and Palestine next March, the British Government having placed a mooring mast at the disposal of the airship for a landing at Port Said. The cruise around the world will, in all probability, take place in the summer. The airship is to proceed via Siberia, across the southern end of Lake Baikal to Tokyo, where stores of gas and fuel will be established. From Tokyo the flight will be continued across the Pacific to Santiago, in California, and thence via Lakehurst, New Jersey, back to Friedrichshafen. In addition to a number of passengers, the airship will carry a large quantity of mail. Negotiations are also in progress for the construction of a new Zeppelin, which is to be completed by the year 1930 and will much exceed the size of the "Graf Zeppelin." A report from Germany on January 17 stated that the *Graf Zeppelin* would make a flight to Egypt via

Marseilles in March, where the ship will be anchored whilst the crew visits Cairo. Palestine and Vienna will be on the return course to Germany.

R 100

THE R 100, which is being constructed at Howden, East Yorkshire, is expected to be ready for test flights in the autumn.

Air Force Operations in Afghanistan

ON January 20 the Royal Air Force conveyed Prince Khalilullah, son of the ex-King Inayatullah, and other members of the Royal Family from Kabul to Peshawar, and it now appears as though most of the members of the late Afghan Cabinet have also been evacuated safely.

New French Airship

A NEW semi-rigid airship designed for the French Navy with a capacity of 3,000 cubic metres, was tested at Orly, near Paris, on January 17. This is the first modern semi-rigid airship built in France.

Air Route to India

IN a recent issue of *FLIGHT* we reported that Imperial Airways are now practically prepared for opening in April the 5,000 miles Empire air route to bring India within six days of London. Arrangements are being made to continue the Empire air route across India to Calcutta and thence via Singapore to Australia, while a branch line to Cape Town will connect with the main Empire route at Cairo. A number of new pilots have now been engaged by Imperial Airways in readiness. These pilots, who are ex-R.A.F. pilots, are now undergoing training in flying the Handley Page (Rolls Royce) and Armstrong-Whitworth air liners on the London-Continental lines, each new pilot having to make a specified number of Cross-Channel flights seated in the mechanics' seat before being allowed to take over the control of the machine.

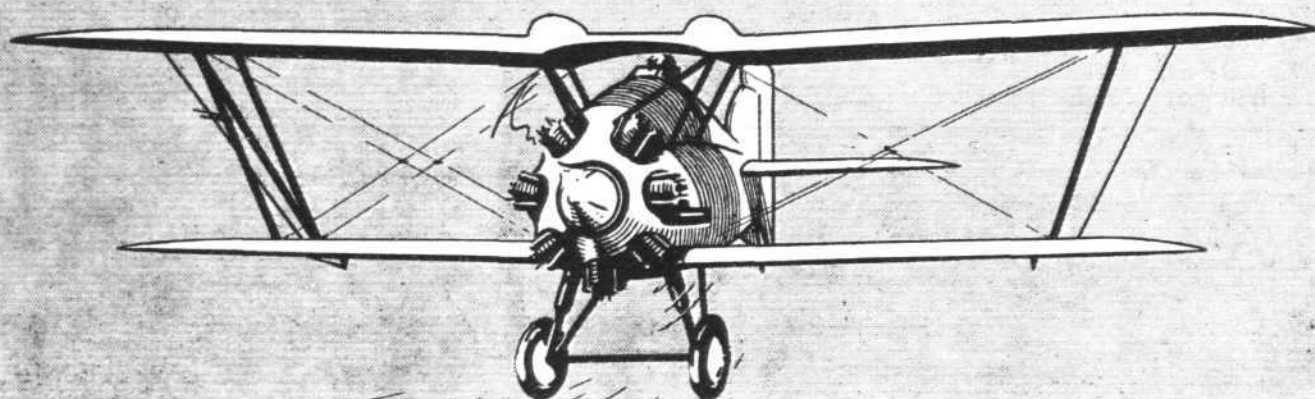
Capt. F. E. Guest, M.P.

CAPT. F. E. GUEST, M.P., was reported to have left Cairo on January 21 for the Sudan on an aerial survey.

Europe-Congo Air Service

THE Belgian Sabana Company and a French company which is now being formed will guarantee a weekly air service from the beginning of next year from Brussels and Paris alternately by way of the Sahara to the Belgian Congo and thence across Africa to Beira. From Beira the French propose to organise a service to Madagascar.

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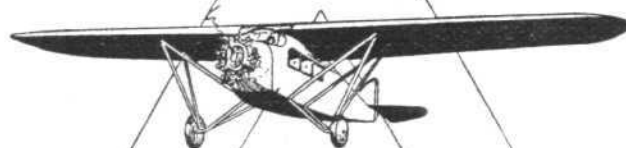
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THE ROYAL AIR FORCE

London Gazette, January 18, 1929.

General Duties Branch

The follg. flight cadets having successfully passed through the R.A.F. Cadet College, Cranwell, are granted permanent commns. as Pilot Officers with effect from and with seniority of Dec. 15, 1928:—B. T. Shelley, J. D. Rutherford, F. C. Sturgiss, E. R. M. Walker, J. R. Scarlett, G. P. Charles, E. C. Hudleston, J. G. W. Weston, F. L. P. Henzell, D. W. Bayne, H. W. Gibbs, H. M. Pearson, D. J. Eayrs, R. C. Jonas, W. R. Beaman, H. G. Richards, D. P. Lascelles, R. W. Letchworth, F. D. Lockwood. The follg. flight cadets having successfully passed through the R.A.F. Cadet College, Cranwell, are granted permanent commns. as Pilot Officers on probation with effect from and with seniority of the dates stated:—J. A. Easton (Dec. 6, 1928), K. R. Coates, J. H. Manning-Fox (Dec. 15, 1928).

The follg. Pilot Officers are promoted to rank of Flying Officer:—R. P. Teale (Oct. 9, 1928), B. D. Nicholas, F. G. Ferrier, A. M. Stevens, T. L. Harrison, R. W. A. Stroud (Jan. 1). The follg. Pilot Officers on probation are confirmed in rank (Jan. 13):—E. J. H. F. Moreton, E. N. V. Everett.

The follg. Flight Lts. cease to be seconded for duty with the Estonian Government (Oct. 10, 1928):—G. C. Gardiner, D.F.C., O. E. Worsley.

Group Captain U. J. D. Bourke, C.M.G., is placed on the half-pay list, scale A (Jan. 1). The follg. are placed on the half-pay list, scale B:—Squadron Leader F. O. Soden, D.F.C., Jan. 1 to Feb. 28 inclusive; Flying Officer R. B. Brown, Dec. 31, 1928, to Jan. 10, 1929, inclusive.

The follg. Flying Officers are transferred to the Reserve:—CLASS A.—W. J. Brett, R. W. Holden, R. T. Messenger, F. E. North, G. M. Pitts-Tucker (Jan. 3); J. E. Clayton, R. K. Coupland, E. H. Fielden, T. H. Finney, P. P. Grey, G. W. P. Irwin, J. F. Nicholas, V. W. Soltan, F. F. Wilkinson (Jan. 14). CLASS B.—E. C. Boucher, P. E. Nicholl (Jan. 14). CLASS C.—H. R. Vaughan Fowler (Dec. 29, 1928); J. E. Preston (Jan. 3); S. E. Bulloch, J. C. Marcy (Jan. 14).

Flying Officer C. G. H. E. Lumsden is transferred to Reserve, Class A (Dec. 9, 1928) (substituted for *Gazette*, Dec. 11, 1928); Pilot Officer on probation F. Wells resigns his short service commn. (Jan. 9). The follg. Flying Officers relinquish their short service commns. on account of ill-health:—E. B. C. Groner (Dec. 28, 1928); J. E. Stuart-Lyon (Jan. 12). The short service commn. of Pilot Officer on probation G. C. Shirlcliffe is terminated on cessation of duty (Jan. 5); Lieut.-Comdr. R. J. Berry, R.N., Flying Officer, R.A.F., relinquishes his temp. commn. on return to Naval duty (Jan. 4); Lt. C. J. N. Atkinson, R.N., Flight Lt., R.A.F., ceases to be attached to R.A.F. on return to Naval duty (Jan. 1).

Stores Branch

The follg. are granted permanent commns. as Pilot Officers on probation, with effect from and with seniority of Jan. 10:—V. H. B. Roth, M. H. Robinson, A. J. Howell, W. J. B. Elliott, J. E. V. Tyzack, R. G. Seymour, R. C. Storrar, G. Blinman. Flying Officer G. E. Pyne is placed on retired list (Jan. 14).

ROYAL AIR FORCE INTELLIGENCE

Appointments.—The following appointments in the Royal Air Force are notified:—

General Duties Branch

Group Captains: C. L. Courtney, C.B.E., D.S.O., to Air Ministry, on appointment as Deputy Director of Operations and Intelligence, 15.1.29. N. Goldsmith, O.B.E., to R.A.F. Depot, Middle East, pending taking over command, 11.1.29.

Wing Commanders: S. W. Smith, O.B.E., to R.A.F. Base, Catterwater, to command, 15.1.29. C. C. Miles, M.C., to Air Ministry (Directorate of Organisation and Staff Duties), for Air Staff duties, 15.1.29. A. W. Tedder, to R.A.F. Staff College, Andover, for duty as Instructor, 3.1.29. R. E. Saul, D.F.C., to No. 22 Group H.Q., S. Farnborough, for Air Staff duties, 3.1.29. W. B. Callaway, A.F.C., to No. 10 Group H.Q., Lee-on-Solent, for Air Staff duties, 3.1.29. W. J. Y. Guilfoyle, O.B.E., M.C., to R.A.F. Station, Hendon, to command and for duty as Superintendent of Reserve, 1.1.29.

Squadron Leaders: A. D. Pryor, to Aircraft Park, India, 17.12.28. A. N. Gallehawk, A.F.C., to H.Q., Inland Area, Stanmore, 8.1.29. D. Colyer, D.F.C., to R.A.F. Staff College, Andover, 30.12.28. A. H. Orlebar, A.F.C., to Marine Aircraft Experimental Estab., Felixstowe, 9.1.29. T. H. Newton, D.S.C., to R.A.F. Base, Gosport, 5.1.29. S. N. Cole, to H.Q., Halton, 10.1.29. G. G. A. Williams, to H.Q., Fighting Area, Uxbridge, 11.1.29.

Flight Lieutenants:—H. E. Falkner, to H.Q., India, 25.11.28. H. S. Scroggs, to R.A.F. Base, Calshot, 22.1.29. C. R. Davidson, M.C., to R.A.F. Depot, Uxbridge, 4.12.28. R. De L. Stedman, to No. 5 Flying Training School, Sealand, 22.12.28. W. K. Mercer, to No. 31 Sqdn., India, 4.1.29. G. G. Walker, M.C., to R.A.F. Depot, Uxbridge, 23.12.28. W. H. Golder, D.S.M., to Aircraft Depot, Iraq, 5.1.29.

Flight Lieutenants: G. R. C. Spencer, to No. 1 (Indian) Group H.Q., 17.12.28. I. A. Bertram, to No. 2 (Indian Wing) Station, 13.12.28. A. P. M. Sanders, to Air Ministry (Directorate of Organisation and Staff Duties), 9.1.29. E. H. Hooper, to R.A.F. Depot, Uxbridge, for Administrative duties, 15.1.29. R. T. B. Houghton, A.F.C., to R.A.F. Reception Depot, West Drayton, 17.1.29. C. O. Fowler, D.S.M., to R.A.F.M.T. Depot, Shrewsbury, 11.1.29. E. A. Blake, M.M., to R.A.F. Base, Calshot, 7.1.29. A. E. Beilby, to No. 100 Sqdn., Bicester, 10.1.29. C. A. C. Fidler, D.C.M., to Home Aircraft Depot, Henlow, 21.1.29. J. B. Barrett, to No. 10 Group H.Q., Lee-on-Solent, 22.12.28. F. H. Shales and F. H. Astle, to No. 4 Flying Training School, Middle East, 11.1.29. C. N. C. Dickson, to Armoured Car Section, Aden Command, 12.1.29.

Flying Officers:—R. A. Barnett, to Aircraft Depot, India, 3.12.28. R. G. Forbes, to No. 31 Sqdn., India, instead of to Aircraft Depot, India, as previously notified. A. L. MacMillan, to R.A.F. Depot, Uxbridge, 24.11.28. P. G. Lucas, to R.A.F. Depot, Uxbridge, 20.12.28. B. M. Cary, to No. 20 Sqdn., India, 4.1.29. F. S. S. Lamprey, H. E. Nowell, and D. K. Hewison, to R.A.F. Depot, Uxbridge, 9.12.28. E. G. D. Stewart, M.C., to No. 101 Sqdn., Bircham Newton 20.1.29. F. B. Tomkins to No. 15 Sqdn., Martlesham Heath, 15.1.29. F. B. G. Walker, to R.A.F. Depot, Uxbridge, 1.1.29. L. S. Tindall, to No. 101 Sqdn., Bircham Newton, 29.12.28.

Flying Officers: K. C. Netherton, to R.A.F. Depot, Uxbridge, 3.1.29. J. H. McN. Campbell, to No. 2 Flying Training Sch., Digby, 8.1.29. J. E. McC. Henderson, to No. 1 Flying Training Sch., Netheravon, 11.1.29. A. P. Marchant, M.B.E., D.S.M., to Marine Aircraft Experimental Estab., Felixstowe, 8.1.29. F. G. Cator, to H.Q., Wessex Bombing Area, Andover, 15.12.28. F. G. S. Wilson, to No. 26 Sqdn., Catterick, 21.1.29. C. S. Cadell, to No. 208 Sqdn., Middle East, 11.1.29. E. C. Foreman, to No. 14 Sqdn., Middle East, 11.1.29.

Pilot Officers.—F. L. Truman and E. N. V. Everett, to Aircraft Depot, India, 30.10.28. N. H. Fresson, W. R. Monro Higgs and A. W. Sandeman,

Accountant Branch

The follg. Pilot Officers on probation are confirmed in rank and promoted to rank of Flying Officer (Dec. 3, 1928):—G. H. White, V. H. Lewis, V. Matveeff, E. L. G. Le Dieu, J. R. Ackers.

Medical Branch

The follg. Flying Officers are promoted to rank of Flight Lt. (Jan. 4):—J. E. Foran, M.B., M. O'Regan.

Chaplains Branch

The Rev. T. Browne, D.D., Ph.D., relinquishes his short service commn. on completion of service (Jan. 11).

Memoranda

The permission granted to R. H. Barbrooke to retain hon. rank of Sec. Lt. is withdrawn on his conviction by the Civil Power (Oct. 15, 1928).

The permission granted to Lt. W. H. Gouldstone to retain his rank is withdrawn on his conviction by the Civil Power (Nov. 23, 1928).

RESERVE OF AIR FORCE OFFICERS

General Duties Branch

P. F. Canning is granted a commn. in Special Reserve as a Pilot Officer on probation (Nov. 20, 1928). Pilot Officer G. E. Langdon is promoted to rank of Flying Officer (Jan. 11), Flying Officer on probation W. E. Hall is confirmed in rank (Dec. 18, 1928).

Flight Lieut. W. Jones is transferred from Class A to Class C. (Jan. 1). Flying Officer E. K. Rayson is transferred from Class AA to Class C (Jan. 6). Flying Officer V. C. Cordingley is transferred from Class C to Class A (Nov. 6, 1928). Pilot Officer H. D. Makgill-Crichton-Maitland resigns his commn. (Nov. 20, 1928). Flying Officer N. J. Nock resigns his commn. on appointment to a commn. in the Auxiliary Air Force (Jan. 8).

The follg. relinquish their commns. on completion of service:—Flight Lt. A. M. Fitzrandolph (Dec. 8, 1928). Flying Officer W. Wilson (Dec. 2, 1928).

Accountant Branch

Flying Officer C. E. Treadgold relinquishes his commn. on completion of service (Jan. 15).

Medical Branch

Flying Officer W. B. Stott relinquishes his commn. on completion of service (Jan. 15).

AUXILIARY AIR FORCE

General Duties Branch

No. 605 COUNTY OF WARWICK (BOMBING) SQUADRON.—The follg. to be Flying Officer:—N. J. Nock (Jan. 8).

Chaplains Branch

No. 602 CITY OF GLASGOW (BOMBING) SQUADRON.—The follg. to be Chaplain with the relative rank of Squadron Leader:—The Rev. Frederick A. Steuart, M.A., B.D. (Jan. 8).

to No. 31 Sqdn., India, 4.1.29. D. Dickson, H. W. Duffey, W. P. J. Thomson, M. R. Kelly, and W. D. Butler, to Aircraft Depot, India, 4.1.29. C. D. C. Boyce, to Far East Flight, 5.1.29.

Pilot Officers: S. O. Bufton, to No. 100 Sqdn., Bicester, 9.12.28. J. D. Richardson, to No. 7 Sqdn., Worthy Down, 9.12.28. H. G. Hamilton, to No. 9 Sqdn., Manston, 9.12.28. P. W. A. Dudgeon, to No. 208 Sqdn., Middle East, 8.1.29. C. V. J. Pratt, to No. 36 Sqdn., Donibristle, 8.1.29. W. F. Murray, to Marine Aircraft Experimental Estab., Felixstowe, 9.12.28. J. A. Easton, to No. 101 Sqdn., Bircham Newton, on appointment to a Permanent Commn., 6.12.28.

The undermentioned Pilot Officers are posted on appointment to Permanent commns. from the R.A.F. Cadet College, Cranwell, with effect from 15.12.28:—B. T. Shelley, J. D. Rutherford, F. C. Sturgiss, J. R. Scarlett, H. M. Pearson, and K. R. Coates, to R.A.F. Base, Calshot. E. R. M. Walker, F. L. P. Henzell, and D. W. Bayne, to No. 12 Sqdn., Andover. G. P. Charles, H. W. Gibbs, and R. C. Jonas, to No. 16 Sqdn., Old Sarum. E. C. Hudleston, to No. 25 Sqdn., Hawkinge. J. G. W. Weston, to No. 207 Sqdn., Eastchurch. D. J. Eayrs and F. D. Lockwood, to No. 2 Sqdn., Manston. W. R. Beaman, to No. 4 Sqdn., S. Farnborough. H. G. Richards and J. H. Manning-Fox, to No. 13 Sqdn., Andover. D. P. Lascelles, to No. 1 Sqdn., Tangmere. R. W. Letchworth, to No. 29 Sqdn., North Weald.

Stores Branch

Flight Lieutenants: S. D. Dennis, to No. 5 Flying Training School, Sealand, 27.11.28. D. W. Wilson, to R.A.F. Depot, Middle East, 11.1.29. S. Bingham, to H.Q., Middle East, 11.1.29.

Squadron Leader W. R. P. Allen to No. 1 Stores Depot, Kidbrooke, 16.12.28. **Flying Officers.**—C. W. Gore, to No. 2 (Indian Wing), Station, India, 5.12.28. R. S. Sawyer, to No. 31 Sqdn., India, instead of to Aircraft Park, India, as previously notified.

Flying Officers: E. N. D. Worsley, to No. 26 Sqdn., Catterick, 19.1.29. A. H. E. Frost, to Central Flying Sch., Wittering, 4.1.29. R. B. Fleming, C. H. W. Bolender, A. E. Haes, and J. T. Riggs, to H.Q., Cranwell, 10.1.29. J. E. Truss, to H.Q., Transjordan and Palestine, 11.1.29. H. Seidenberg, to No. 8 Sqdn., Aden Command, 12.1.29.

Pilot Officers: V. H. B. Roth, M. H. Robinson, A. J. Howell, W. J. B. Elliott, J. E. V. Tyzack, R. G. Seymour, R. C. Storrar, and G. Blinman, to H.Q., Cranwell, on appointment to Permanent Commns., 10.1.29.

Accountant Branch

Wing Commander H. J. Down, to H.Q., Middle East, 11.1.29.

Flight Lieutenants: H. J. Gilbert, to Aeroplane and Armament Experimental Estab., Martlesham Heath, 17.1.29. F. H. Wakeford, to No. 5 Flying Training School, Sealand, 14.1.29. C. W. Rogers, to R.A.F. Depot, Middle East, 11.1.29.

Flying Officer H. Crowther, to H.Q., Aden Command, 12.1.29.

Flying Officers.—J. T. Rose, to R.A.F. Depot, Uxbridge, 23.12.28. J. J. Caiger, to R.A.F. Station, Upper Heyford, 23.12.28.

Medical Branch

Wing Commander.—H. P. Porteous, M.B., to H.Q., Mediterranean, 22.11.28.

Flight Lieutenants.—G. J. Hanly, M.B., to No. 1 (Indian Wing) Station 1.11.28. T. W. Wilson, to No. 2 (Indian Wing) Station, 1.11.28.

Flight Lieutenants: L. P. McCullagh, M.B., to Home Aircraft Depot, Henlow, 18.1.29. E. Thompson, to H.Q., Middle East, 11.1.29.

Flying Officers: R. F. MacLatchy, M.D., to H.Q., Air Defence of Great Britain, Uxbridge, 9.1.29. L. O'Connor, M.B., to R.A.F. Depot, Uxbridge, 24.1.29. G. T. O'Brien, to H.Q., Middle East, 11.1.29.

PERSONALS

Married

On January 16, 1929, at St. Mary's Church, Elloughton, East Yorks, GILBERT CHARLES FREDERICK ELY, Flying Officer, R.A.F.O., youngest son of Dr. and Mrs. T. Ely, of Scarborough, was married to VIOLET HENRIETTA SOADY, youngest daughter of Rev. Sidney J. and Mrs. Soady, of Elloughton. Since the war Mr. Ely has been connected with the Design Staff of the Blackburn Aeroplane and Motor Co., Ltd., and, more recently, has held the position of Publicity Manager to that firm.

To be Married

An engagement is announced between FLYING OFFICER N. CARTER, elder son of Colonel G. L. Carter, C.I.E., and Mrs. Carter, and Miss K. HEMMING, elder daughter of Canon C. H. Hemming, late Chaplain of Simla, and Mrs. Hemming.

The engagement is announced between SQUADRON-LEADER R. M. DRUMMOND, D.S.O., O.B.E., M.C., R.A.F., elder son of Mr. and Mrs. J. M. Drummond, of Cottesloe, Western Australia, and ISABEL RACHAEL MARY, only daughter of the late PARIS F. DRAKE-BROCKMAN, of the Inner Temple, and Mrs. Drake-Brockman, of Cintra Park, Upper Norwood, London.

The engagement is announced between PHILIP EDWARD GERALD SAYER, R.A.F., only son of Wing-Commander E. J. Sayer, M.C., and Mrs. Sayer, and MAY VIOLET ELLEN, only daughter of the Rev. J. W. and Mrs. WALLACE SMYTH, of Lamarsh Rectory, Bures, late of the R.A.Ch.D.

The engagement is announced between ALFRED CHARLES SHARP, R.A.F., elder son of Mr. and the late Mrs. Charles Frederick Sharp, of Holywell St. Ives, Hunts, and ALISON SCOTT, second daughter of Mr. and Mrs. G. E. WOLLEN, of Etonhurst, Weston-super-Mare.

Death

Flying Officer A. W. A. Ricks, who was killed in a flying accident at Khar-tum, on December 26, 1928, was a son of Engineer-Lieutenant W. E. Ricks, R.N., retired, and Mrs. Ricks, of Drayton, Portsmouth.

Items

The will of Lieutenant Gwynn Henry Buller Madocks, Coldstream Guards, who was killed in a flying accident at the Household Brigade Aviation Meeting, at Brooklands, on November 9, has been proved at £419.

The will of Flight-Lieutenant William Edmond Somervell, R.A.F., of 12C Squadron, Andover, who was killed at Hendon Aerodrome, on October 11, during a display given before the Sultan of Muscat and Oman, has been proved at £3,132.

The late Col. Ivor Curtis, C.B.E., M.A., of Downs Road, Coulsdon, Surrey, Educational Adviser to the Air Ministry, left £4,373.

AIR MINISTRY NOTICES TO AIRMEN

Lympne Aerodrome: Neon Air Light

1. A NEON air light having been installed at Lympne aerodrome, the white cone-shaped light will no longer be operated.

2. Particulars of the new light are as follow:—

Position.—On W. side of Lympne aerodrome, on N.E. corner of most northerly hangar.

Character.—A red group flashing light is exhibited every 3 secs., thus:—

Light, $\frac{1}{2}$ sec.; eclipse, $\frac{1}{2}$ sec.

Light, 1 sec.; eclipse, 14 secs.

Visibility.—45 miles. **Candle Power.**—6,000.

Description of structure.—16 Neon tubes, each 20 ft. long, arranged in the form of a vertical truncated cone, around a steel framework erected on a buttress of the hangar.

Height above ground.—60 ft. (overall). **Height above sea level.**—400 ft.

Hours of operation.—The light is operated by day, during conditions of bad visibility, and, at night, on request to Aerodrome Officer, Lympne, or when an aircraft is expected.

(No. 4 of 1929.)

NOTICES TO GROUND ENGINEERS

Avro "Avian": Lower Centre Section Spars.

1. The attention of Ground Engineers and all concerned is directed to the fact that cases have occurred where shakes have developed in the above members.

2. Ground Engineers are to carry out, as a precautionary measure, frequent examinations of the front spar of the triangular centre section, and the short spar passing through the fuselage, in order to ascertain whether any shakes or signs of failure are developing.

3. An examination of these spars can be made through the inspection doors provided in the underside of the centre sections, and from the interior of the fuselage.

4. Modification action is being taken to obviate such failures, and a further notice to Ground Engineers will be issued in this connection.

(No. 4 of 1929.)

vacancies for Royal Air Force Aircraft Apprentices

THE Air Ministry announces:—Six hundred aircraft apprentices, between the ages of 15 and 17, are required by the Royal Air Force for entry into the Schools of Technical Training at Halton, Bucks, and at Cranwell, near Skeaford, Lincs. They will be enlisted as the result of an open competition and of a limited competition which will be held in the near future by the Civil Service Commissioners and the Air Ministry respectively. Successful candidates will be required to complete a period of 12 years' regular Air Force service from the age of 18, in addition to the training period. At the age of 30 they may return to civil life or may be permitted to re-engage to complete time for pension.

Full information regarding the dates of the respective examinations, the methods of entry and the aircraft apprentice scheme generally can be obtained if early application is made to the Royal Air Force, Gwydyr House, Whitehall, London, S.W.1. In this connection the sons of officers, warrant officers and senior N.C.O.s of the three services receive special consideration.

The scheme offers a good opportunity to well-educated boys of obtaining a three years' apprentice course of a high standard and of following an interesting technical career. Already over 5,000 aircraft apprentices have completed their training at the technical schools of the Air Force, and the annual output is approximately 1,000 fully-trained aircraftmen.

The principal trades open to boys are metal rigger, a new trade brought into existence by the introduction of the metal aeroplane, which involves training in both fitting and sheet-metal work, fitter (aero engine), fitter (driver, petrol), fitter (armourer), coppersmith and metal worker, wireless operator-mechanic and electrician. The apprentices are given a thorough training in their trade by highly-qualified technical instructors and their

general education is also carried on simultaneously by a staff of graduate teachers.

During the training period the rate of pay is 1s. a day for the first two years and 1s. 6d. a day thereafter until the apprentice has both attained the age of 18 and been posted to a unit on completing his training. When he is posted to a unit for duty as an aircraftman, the commencing rate of pay varies from 3s. 3d. to 5s. 6d. a day (22s. 9d. to 38s. 6d. a week), according to the marks obtained in the passing-out examination. He also receives free board and lodging.

A few apprentices of special promise proceed to the Royal Air Force Cadet College for training with a view to becoming Commissioned Officers. For the remainder, opportunities arise later to volunteer to qualify in flying and become airman pilots. Selection to the number of about 80 is made annually from volunteers of all trades. From amongst airman pilots a few are periodically selected for commissioned rank.

Royal Air Force Cadet College

THE Air Ministry announces:—

The following Flight Cadets successfully completed on December 14, 1928, their course of training at the Royal Air Force Cadet College. The names are arranged in alphabetical order.—Bayne, D. W.; Beaman, W. R.; Charles, G. P. (winner of Sword of Honour); Coates, K. R.; Eayrs, D. J.; Gibbs, H. W.; Henzell, F. L. P.; Hudleston, E. C.; Jonas, R. C.; Lascelles, D. P. (winner of R. M. Groves Memorial Prize); Letchworth, A. W.; Lockwood, F. D.; Manning-Fox, J. H.; Pearson, H. McD.; Richards, H. G.; Rutherford, J. D.; Scarlett, J. R.; Shelley, B. T. (winner of Abdy Gerrard Fellows Memorial Prize and Air Ministry Prize for Aeronautical Engineering); Sturgiss, F. C.; Walker, E. R. M.; Weston, J. G. W. (winner of Air Ministry Prize for Humanistic Subjects).

PUBLICATIONS RECEIVED

Pictorial Calendar, 1929. The Avro "Avian" Light Aeroplane. A. V. Roe and Co., Ltd., Newton Heath, Manchester.

Calendar, 1929. Junkers-Flugzeugwerk A.-G., Dessau, Germany.

Précis de Construction, Calcul et Essais des Avions et Hydravions. By J. Guillemin. Gauthier-Villars et Cie., 55, Quai des Grands-Augustins, Paris. Price 100 fr.

Aircraft Float Design. By Holden C. Richardson. The Ronald Press Co., 15, East 26th Street, New York, N.Y., U.S.A. Price 5 dols.

The Distribution of Mean Annual Maxima and Minima of Temperature over the Globe. By C. E. P. Brooks, and Miss G. L. Thorman. Meteorological Office Geophysical Memoirs No. 44. M.O. 307d. H.M. Stationery Office, Kingsway, London, W.C.2. Price 1s. net.

All the World's Aircraft, 1928. Edited by C. G. Grey. Sampson Low, Marston Co., Ltd., 100, Southwark Street, London, S.E. Price £2 2s. net.

Calendar, 1929. British Thomson-Houston Co., Ltd., Rugby.

The Air Pilot Monthly Supplement. No. 50. December, 1928. Air Ministry, Kingsway, London, W.C.2.

The Broken Trident. By E. F. Spanner. E. F. Spanner, 9, Billiter Square, Billiter Street, London, E.C.3. Price 2s. 6d. net.

AERONAUTICAL PATENT SPECIFICATIONS

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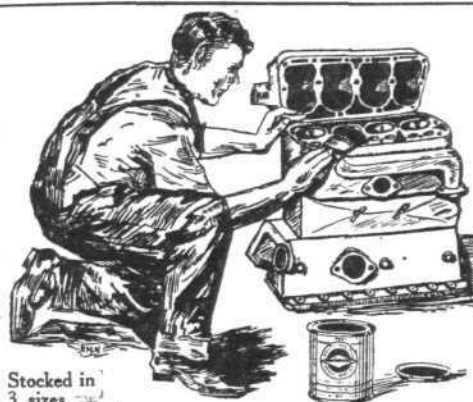
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